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SACRAMENTO.  
220 TO 226 K STREET.

SAN FRANCISCO.  
JUNCTION BUSH & MARKET ST.



NEW YORK. 77 & 79 BROAD ST.

SAN FRANCISCO.



HUNTINGTON HOPKINS & CO.

HARDWARE

IRON, STEEL & C.

SACRAMENTO.  
220 TO 226 K STREET

SAN FRANCISCO.  
JUNCTION BUSH & MARKET STS.



NEW YORK. 77 & 79 BROAD ST

SACRAMENTO.



ILLUSTRATED CATALOGUE

AND

PRICE LIST

OF

**HARDWARE**

IRON, STEEL, COAL, ETC.

**HUNTINGTON, HOPKINS & CO.**

SAN FRANCISCO AND SACRAMENTO.

1884.

---

SACRAMENTO:

Press of H. S. Crocker & Co.



## TO OUR PATRONS.

---

We are pleased to present you with our Illustrated Catalogue for 1884.

Our patrons found our former Catalogue of so much assistance in making their selections that we have been encouraged to go somewhat more into details than formerly. While we believe we have so clearly illustrated and explained the principal Hardware used on this coast that no difficulty will be experienced in making selections, we regret not being able to be equally definite as to prices; the numerous and constant market changes make it impossible to furnish prices that may be relied on for any length of time. We stand ready, however, to furnish latest quotations upon application.

At the end of our Catalogue will be found a number of Telegraph Ciphers that will effect quite a saving when occasion requires your telegraphing for goods. There are also some well selected tables of useful information.

Kindly acknowledge receipt of this Catalogue.

HUNTINGTON, HOPKINS & CO.





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# STEEL.

## Crescent—American.

**BEST REFINED TOOL QUALITY.**

Round, Square and Octagon,  $\frac{1}{2}$  to 2 inches; Flat,  $\frac{3}{8}$  to 1 by  $\frac{1}{2}$  to 4 inches..... Cts. per lb.

Size, inches.	FLAT.	Cts. per lb. Extra.	Size, inches.	OCTAGON.	Cts. per lb. Extra.
$\frac{1}{8}$ inch by $\frac{1}{4}$ inch wide.....		15	$\frac{1}{4}$ inch.....		05
$\frac{1}{8}$ " $\frac{3}{8}$ " .....		10	5-16 " .....		03
$\frac{1}{8}$ " $\frac{1}{2}$ " .....		05	$\frac{3}{8}$ " .....		01
$\frac{1}{8}$ " $\frac{5}{8}$ " .....		05			
$\frac{1}{8}$ " $\frac{3}{4}$ to 1 " .....		05			
$\frac{1}{8}$ " $1\frac{1}{8}$ to 4 " .....		05			
3-16 " $\frac{1}{4}$ and 5-16 " .....		10			
3-16 " $\frac{3}{8}$ to $\frac{5}{8}$ " .....		05			
3-16 " $\frac{3}{4}$ to 5 " .....		02			
$\frac{1}{4}$ " 5-16 to $\frac{1}{2}$ " .....		05			
$\frac{1}{4}$ " $\frac{3}{8}$ to 6 " .....		01			
$\frac{3}{4}$ " $5\frac{1}{4}$ to 6 " .....		01			
$\frac{3}{8}$ " $4\frac{1}{4}$ to 6 " .....		01			
1 " $4\frac{1}{4}$ to 6 " .....		01			
$1\frac{1}{8}$ " 4 to 6 " .....		01			
$1\frac{1}{4}$ " $3\frac{1}{2}$ to 6 " .....		01			

### ROUND AND SQUARE.

$\frac{1}{8}$ inch.....	25
3-15 " .....	15
$\frac{1}{4}$ " .....	05
5-16 " .....	03
$\frac{3}{8}$ " .....	01
$2\frac{1}{8}$ to 3 inches.....	01
$3\frac{1}{8}$ to 6 " .....	02

### HAMMER AND PICK QUALITY.

Square,  $\frac{1}{2}$  to 2; Flat,  $\frac{3}{8}$  to 1 by  $\frac{1}{2}$  to 4 inches..... Cts. per lb.

Size, inches.	SQUARE.	Cts. per lb. Extra.	Size, inches.	SQUARE.	Cts. per lb. Extra.
$\frac{1}{4}$ inch .....		06	$4\frac{1}{8}$ to 5 inches.....		05
5-16 " .....		04	$5\frac{1}{8}$ to 6 " .....		08
$\frac{3}{8}$ " .....		01			
$2\frac{1}{8}$ to 3 inches .....		01			
$3\frac{1}{8}$ to 4 " .....		02			

### FLAT.

$\frac{3}{8}$ to 1 inch by $4\frac{1}{4}$ to 6 inches.....	01
--	----

CRESCENT EXTRA.—Special for Lathe, Planer and Slotter Tools, Taps, Punches, etc. Add 1 cent per lb. to refined.

Crescent, like all fine steels, to give satisfactory results, should be worked at as low a heat as possible, with a good supply of fuel and a very gentle blast, and hardened at a very low cherry red.

### MACHINERY QUALITY.

Round,  $\frac{1}{2}$  to 2 inches..... Cts. per lb.

Size, inches.	ROUND.	Cts. per lb. Extra.
$\frac{3}{8}$ inch.....		01
$2\frac{1}{8}$ to 3 " .....		01
$3\frac{1}{8}$ to 4 " .....		03
$4\frac{1}{8}$ to 5 " .....		06
$5\frac{1}{8}$ to 6 " .....		09

### MISCELLANEOUS.

	Cts. per lb.
Toe Calk .....	
Tire .....	
Plow.....	
Spring.....	
Spring, $\frac{1}{8}$ inch thick.....	
Hammered German.....	
Saw Plate. No. 26 gauge to 3 16 in. thick.....	

## Naylor's—English.

Best Cast Tool; all the leading sizes of Flat, Octagon, Round and Square.

Round, Square and Octagon,  $\frac{1}{2}$  to 2; Flat,  $\frac{3}{8}$  to 1 by  $\frac{1}{2}$  to 4 inch..... Cts. per lb.  
Extra sizes advance same as Crescent.

## Firth's—English.

Best Cast Tool; all the leading sizes of Octagon.

Best Cast Tool, Octagon,  $\frac{1}{2}$  to 2..... Cts. per lb.  
Best Cast Tool, Quarter Octagon,  $\frac{3}{4}$  and  $\frac{7}{8}$  for granite drills and chisels..... " "

## Mushet's—English.

Special, for Lathe and Planer Tools..... Cts. per lb.

We are agents for the Pacific Coast, for the "OTIS STEEL," and can also furnish, on specification, BOILER HEAD, BOILER PLATE, and SMOKE STACK STEEL, cut to dimensions.

# IRON.

## Refined.

Round and Square,  $\frac{3}{4}$  to 2 inch ; Flat,  $\frac{3}{8}$  to 1 by  $1\frac{1}{8}$  to 4 inches.....Cts. per lb.

Size, inches.	ROUND AND SQUARE.	Cts. per lb. Extra.	Size, inches.	FLAT.	Cts. per lb. Extra.
3-16.....		4	$1\frac{1}{4}$ and 5-16 by $\frac{5}{8}$ .....		$11\frac{1}{2}$
$1\frac{1}{4}$ .....		2	$1\frac{1}{4}$ and 5-16 by $\frac{3}{4}$ to 1.....		$1\frac{1}{2}$
5-16.....		$11\frac{1}{2}$	$1\frac{1}{4}$ and 5-16 by $1\frac{1}{8}$ to 3.....		$1\frac{1}{4}$
$\frac{3}{8}$ and 7-16.....		1	$1\frac{1}{4}$ and 5-16 by $3\frac{1}{2}$ to 5.....		$1\frac{1}{2}$
$1\frac{1}{2}$ , 9-16, $\frac{5}{8}$ , and 11-16.....		$\frac{1}{2}$	$1\frac{1}{4}$ and 5-16 by $5\frac{1}{4}$ to 6.....		1
$\frac{3}{4}$ to 2.....		0	No. 12 to 2 inch by 7 and 8.....		2
$2\frac{1}{8}$ to $2\frac{3}{4}$ .....		$1\frac{1}{4}$	$\frac{3}{8}$ and 7-16 by $1\frac{1}{2}$ .....		$11\frac{1}{2}$
3 to $3\frac{1}{4}$ .....		$\frac{1}{2}$	$\frac{3}{8}$ to 9-16 by $\frac{5}{8}$ .....		1
$3\frac{1}{2}$ .....		$\frac{3}{4}$	$\frac{3}{8}$ to $\frac{5}{8}$ by $\frac{3}{4}$ .....		$1\frac{1}{2}$
$3\frac{3}{4}$ and 4.....		1	$\frac{3}{8}$ to $\frac{3}{4}$ by $\frac{7}{8}$ and 1.....		$1\frac{1}{4}$
$4\frac{1}{4}$ and $4\frac{1}{2}$ .....		$1\frac{1}{4}$	$\frac{3}{8}$ to 1 by $1\frac{1}{8}$ to 4.....		0
$4\frac{3}{4}$ .....		$1\frac{1}{2}$	$\frac{3}{8}$ to 1 hy $4\frac{1}{4}$ to 6.....		$1\frac{1}{2}$
5 and $5\frac{1}{4}$ .....		2	$1\frac{1}{8}$ to $1\frac{1}{2}$ by $1\frac{1}{2}$ to 4.....		$1\frac{1}{4}$
$5\frac{1}{2}$ and $5\frac{3}{4}$ .....		$2\frac{1}{2}$	$1\frac{1}{8}$ to $1\frac{1}{2}$ hy $4\frac{1}{4}$ to 6.....		$\frac{3}{4}$
6.....		3	$1\frac{5}{8}$ to 2 by $2\frac{1}{2}$ to 4.....		$1\frac{1}{2}$
BAND.			$1\frac{5}{8}$ to 2 by $4\frac{1}{4}$ to 6.....		1
No. 12 to 3-16 by $\frac{5}{8}$ inch wide.....		2	ANGLE:		
No. 12 to 3-16 by $\frac{3}{4}$ inch wide.....		$13\frac{1}{4}$	$1\frac{1}{8}$ by $\frac{3}{4}$ to 1.....		3
No. 12 to 3-16 by $\frac{7}{8}$ inch wide.....		$11\frac{1}{2}$	$1\frac{1}{8}$ hy $1\frac{1}{4}$ and wider.....		$21\frac{1}{2}$
No. 12 to 3-16 by 1 and $1\frac{1}{8}$ inch wide.....		1	3-16 by $\frac{7}{8}$ and 1.....		$21\frac{1}{2}$
No. 12 to 3-16 hy $1\frac{1}{4}$ to 6 inch wide.....		$\frac{3}{4}$	3-16 hy $1\frac{1}{4}$ and wider.....		$11\frac{1}{2}$
HOOP.			$1\frac{1}{4}$ hy 1 and wider.....		$11\frac{1}{2}$
Prices subject to special quotations.			$\frac{3}{8}$ and thicker, all widths.....		1
GALVANIZED.			OVAL. HALF OVAL AND HALF ROUND.		
$3\frac{1}{2}$ cents advance on Hoop and Band.			$\frac{3}{8}$ and $1\frac{1}{2}$ .....		2
3 cents advance on Bar.			$\frac{5}{8}$ and wider.....		$11\frac{1}{2}$

## Norway.

Round and Square,  $\frac{3}{4}$  to 2 inch ; Flat,  $\frac{3}{8}$  to  $1\frac{1}{4}$  inch thick.....Cts. per lb.

Size, inches.	ROUND AND SQUARE.	Cts. per lb. Extra.	Size, inches.	FLAT.	Cts. per lb. Extra.
$1\frac{1}{4}$ and 5-16.....		$\frac{3}{4}$	$1\frac{1}{8}$ and 3-16 thick.....		3
$\frac{3}{8}$ to $\frac{5}{8}$ .....		$1\frac{1}{4}$	$1\frac{1}{4}$ and 5-16 thick.....		$1\frac{1}{4}$
$\frac{3}{4}$ to 2.....		0	$\frac{3}{8}$ to $1\frac{1}{4}$ thick.....		0
$2\frac{1}{8}$ to 4.....		$1\frac{1}{4}$	$1\frac{3}{8}$ to 2 thick.....		$1\frac{1}{4}$
Nail Rods.....		1	Oval and Half Oval.....		$1\frac{1}{4}$
Shoe Shapes.....		0	Half Round.....		$1\frac{1}{4}$

## Plate.

C. No. 1, No. 12, and thicker.....Cts. per lb.  
C. H. No. 1, No. 12 and thicker..... " "

## Boiler Head.

C. H. No. 1.....Cts. per lb.

Flanged to Order.

# SHEET AND PLATE IRON.

## Black.

Refined.		Cts. per lb.
No.	Size	
No. 12	24 × 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 120	.....
	30 " 72	.....
	30 " 96	.....
	30 " 120	.....
	32 " 96	.....
	32 " 120	.....
	34 " 96	.....
	34 " 120	.....
	36 " 96	.....
	36 " 120	.....
	38 " 120	.....
	40 " 96	.....
	40 " 120	.....
	42 " 96	.....
	42 " 120	.....
	44 " 96	.....
	44 " 120	.....
No. 14	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	30 " 72	.....
	30 " 84	.....
	30 " 96	.....
No. 16	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	30 " 72	.....
	30 " 96	.....
	30 " 144	.....
No. 18	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	30 " 72	.....
	30 " 84	.....
	30 " 96	.....
No. 20	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	30 " 72	.....
	30 " 84	.....
	30 " 96	.....
No. 22	24 " 72	.....
	24 " 84	.....
	30 " 72	.....
	30 " 84	.....
	30 " 96	.....
	30 " 84	.....
No. 24	24 " 72	.....
	24 " 84	.....
	30 " 72	.....
	30 " 84	.....
	30 " 96	.....
	30 " 84	.....

## Refined.—Continued.

No.	Size	Cts. per lb.
No. 26	24 × 72	.....
	24 " 84	.....
No. 27	24 " 72	.....
	24 " 84	.....
No. 28	24 " 84	.....
	24 " 84	.....

## Russia.

28 x 56.

No.	Weight, per Sheet.	Wire Gauge.	Cts. per lb.
9	8 lbs.	No. 27	.....
12	10 3/4 "	" 24 1/2	.....
13	11 3/4 "	" 24	.....

## Galvanized.

### Refined.

No.	Size	Cts. per lb.
No. 14	24 × 96	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	30 " 96	.....
No. 20	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 22	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 24	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 26	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 27	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 28	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
	24 " 72	.....
	24 " 84	.....
	24 " 96	.....

### Charcoal.

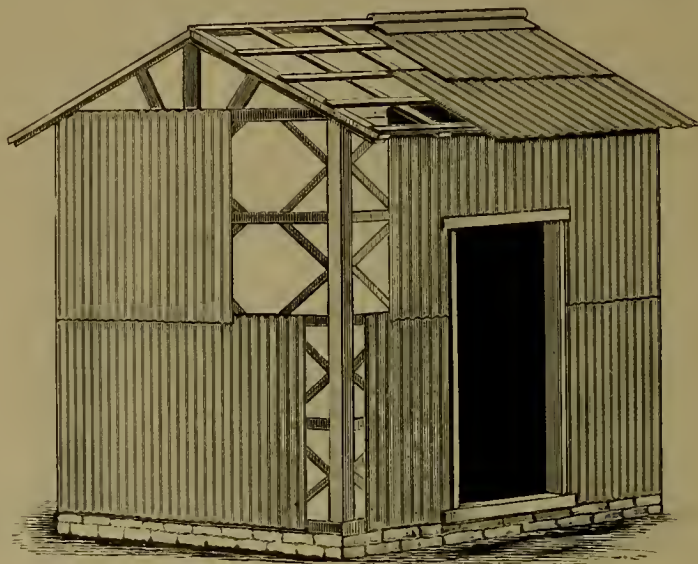
No. 18	24 × 72	.....
	24 " 84	.....
	24 " 96	.....
No. 20	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 22	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 24	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 26	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 27	24 " 72	.....
	24 " 84	.....
	24 " 96	.....
No. 28	24 " 72	.....
	24 " 84	.....
	24 " 96	.....

In addition to the above, we carry in stock Plate Iron, C. No. 1 and CH No. 1, Nos. 11 and 10, 3-16, 1/4 5-16 and 3/8 inch thick, all ordinary widths and lengths

Any other sizes furnished to order, shipments being made from the East by Rail or Steamer.

# CORRUGATED SHEET IRON.

For Covering the Roofs and Sides of Buildings.



CORRUGATED SHEET IRON has the following qualities, essential to all covering material :

It is Fire, Lightning, Water and Wind Proof.

It is the strongest known form of Sheet Iron, and imparts material strength to the structure to which it is attached by its lineal rigidity.

It allows for the use of a light frame, being a support in itself.

A building covered with it makes a handsome appearance.

Every corrugation is a channel in itself, carrying off the water quickly--not allowing it to remain and rust the roof.

It provides for contraction and expansion without warping or displacing the sheet

There is no solder to crack off with the heat, as on tin.

It is the cheapest covering, considering its lasting qualities.

It never wears out, if kept properly painted.

It is easier to put on than any other metal covering : any one who can drive a nail can attach it.

It can be readily taken off and moved from one building to another.

Corrugated Iron is used for Roofs and Sides of Buildings. It is usually laid directly upon the purlins of Roofs, and held in place by Nails.

The corrugations are made of various sizes, ranging from  $1\frac{1}{4}$  inch to 5 inches wide, from center to center, and  $\frac{3}{8}$  to 1 inch deep. The size of corrugations manufactured by us is a medium one ( $3\frac{1}{2}$  wide,  $\frac{5}{8}$  deep), which is more pleasing to the eye, and more economical than larger corrugations. The size of sheets we generally use are 22 and 24 gauge thick, 24, 30 and 36 inches wide, and 6, 7 and 8 feet long, although other gauges and lengths can be corrugated when desired.

Perhaps the most convenient sized sheets to use are 30 inches in width, which, allowing for corrugations and laps, will cover about 24 inches of the surface of the roof.

One corrugation is allowed for lap in the width of the sheet, and from 4 to 6 inches in the length, according to pitch of roof.

By one corrugation is meant the double curve between corresponding points ; and by depth of corrugation, the greatest deviation from the straight line measured between the concave surfaces of the corrugated sheets.



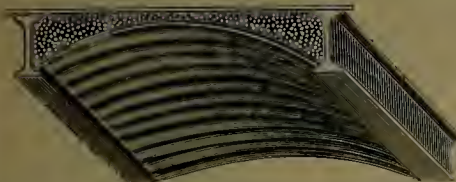
## Corrugated and Curved Sheet Iron.

For Ceilings in Fire-Proof Buildings.



The curved corrugated iron rests on the lower flanges of the beams, the space being filled with CONCRETE, to or above the top of the beams, as desired. The principal merits of this style of Ceiling are: STRENGTH, LIGHTNESS, CHEAPNESS, and its FIRE-PROOF QUALITIES.

These arches have often been tested, and have never shown any deflection at a load of 1,000 lbs. per square foot, and very little deflection at 2,000 or 3,000 lbs. per square foot.



Showing Curved Sheet in place in ceiling of a fire-proof Building.

Table giving Sizes and Weights of Corrugated Iron for Roofs and Sides of Buildings, calculated for sheets 30 inches wide before corrugation :

Number by Birmingham Gauge.	Thickness in parts of an inch.	Weight per Square Foot.		Weight per square (100 Square Feet), when laid, allowing 6 inches lap in length, and 34 inches, or one corrugation in width of sheet. For sheets the following lengths.		
		Flat.	Corrugated.	6 Feet.	7 Feet.	8 Feet.
		Lbs.	Lbs.			
20	.035	1.40	1.76	192	190	188
22	.028	1.12	1.41	154	152	150
24	.022	.88	1.11	121	120	118
26	.018	.72	.91	99	97	97

The Galvanizing of Sheet Iron adds about one third of a pound per square foot to its weight.

Prices furnished upon application.

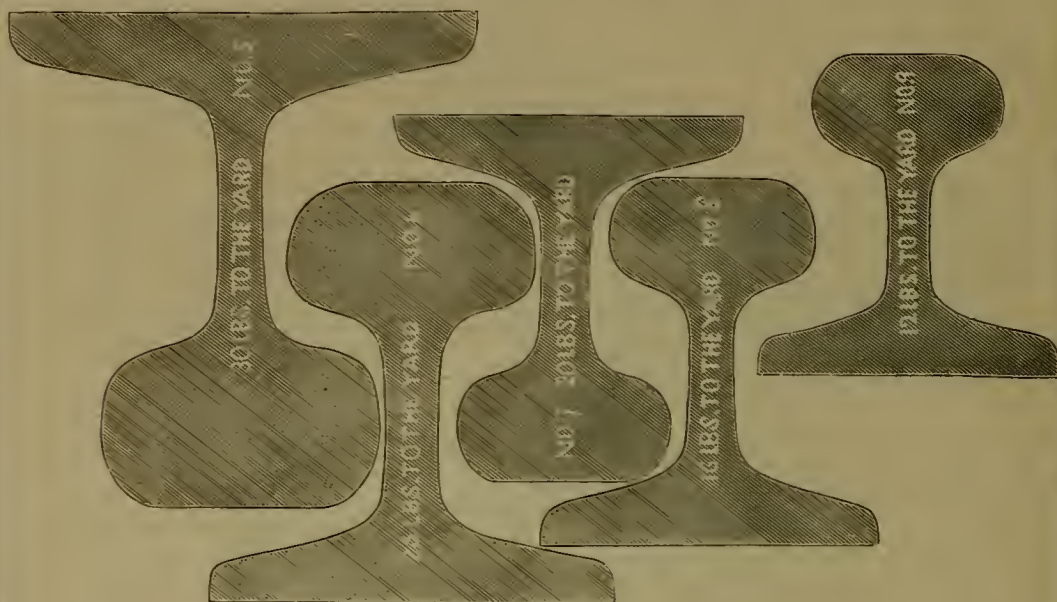
## CAR WHEELS.



For Mining and Street Cars; Narrow and Broad Gauge Roads.

Prices furnished upon application.

## RAILROAD IRON.



Weight per yard, lbs.	12	16	20	25	30	35	40	45	50	56	60
Cts. per lb.											

Rails 30, 35, 40, 45, 50 and 56 lbs. to the yard are rolled in 30 feet lengths: 16, 20, 25 and 30 lbs. to the yard, 24 feet lengths: 12 lbs. to the yard, 20 feet lengths.

It requires for a Mile of Track:

352 Rails in 30 feet lengths.  
377 Rails in 28 feet lengths.

440 Rails in 24 feet lengths.  
528 Rails in 20 feet lengths.

## Fish Plates and Chairs.

Cts. per lb.

6375 lbs. Fish Plates per mile, for 50 and 56 lbs. rail,	
5300 " " for 45 "	
2908 " " for 30, 35 and 40 "	
2262 " " for 25 "	
1615 " " for 16 and 20 "	
275 lbs. Chairs for 12 and 8 lbs. rails	

## Fish Plate Bolts.

Cts. each.

1450 Bolts, $\frac{3}{4}$ x $3\frac{1}{4}$ in., per mile for 56 to 45 lbs. rail,	
1450 " $\frac{3}{8}$ x $2\frac{1}{4}$ " for 35 to 40 "	
1450 " $\frac{1}{2}$ x $2\frac{1}{2}$ " for 30 "	
1780 " 7-16 x 2 " for 25 "	
2150 " $\frac{3}{8}$ x $1\frac{3}{4}$ " for 16 and 20 "	

## Railroad Spikes.

6000 lbs R. R. Spikes, 9-16x5 in., per mile for 45 to 60 lb. rail.	Number in 100 lbs., 180.	Cts. per lb
4500 " " $\frac{1}{2}$ x $4\frac{1}{2}$ " for 35 to 40 "	250	"
4200 " " 7-16 x $4\frac{1}{2}$ " for 25 to 30 "	334	"
3300 " " $\frac{3}{8}$ x 4 " for 16 to 20 "	487	"
2700 " " $\frac{3}{8}$ x $3\frac{1}{2}$ " for 12 "	590	"
2100 " " 5-16 x $3\frac{1}{2}$ " for 8 to 12 "	857	"

## Track Iron.

For Tramways, Etc.

Thickness, inches...	$\frac{1}{4}$ & 5-16	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{4}$ & 5-16	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{4}$ & 5-16	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{4}$ & 5-16	$\frac{3}{8}$	$\frac{1}{2}$
Width, inches, .....	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	2	2	2
Size of holes, inches.	$\frac{1}{4}$	5-16	$\frac{3}{8}$	$\frac{1}{4}$	5-16	$\frac{3}{8}$	$\frac{1}{4}$	5-16	$\frac{3}{8}$	$\frac{1}{4}$	5-16	$\frac{3}{8}$
Punching and countersinking $\frac{1}{4}$ and 5-16 in.	Cts. per hole											
Punching " $\frac{3}{8}$ and $\frac{1}{2}$ "	" "											

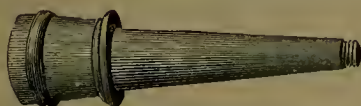
Other sizes punched and counter-sunk to suit any style of spike, for which special rates will be charged.

## CUMBERLAND COAL.

This article we import by the cargo from the Jackson Vein, Georges Creek Mine, which is acknowledged to be the best that comes to this market. We deal in no other kind of coal, so purchasers can depend on getting a pure article. WE GUARANTEE ALL OUR COAL TO BE FIRST CLASS. It is stored under cover in our brick warehouse, and consequently the quality is not impaired by exposure.

In Sacks, 250 to 300 lbs. each..... Per ton, \$

## THIMBLE SKEINS.



### Seamless.

Size, inches.	Per set.	Size, inches.	Per set.
2½ by 8 .....	\$5 50	3¾ by 12 .....	\$ 9 50
2¾ by 8 .....	5 75	4 by 12 .....	10 50
2¾ by 8½ .....	6 25	4¼ by 12 .....	11 75
3 by 9 .....	7 00	4½ by 12 .....	11 75
3¼ by 10 .....	7 50	4½ by 13 .....	13 50
3½ by 11 .....	8 00	5 by 13 .....	15 00
3½ by 12 .....	8 50	5 by 14 .....	16 00
3¾ by 11 .....	9 00		

Pipe Boxes to fit above Skeins carried in stock.



### Wrought Steel.

Size, inches.	Per set.	Size, inches.	Per set.
2½ by 8 .....	\$ 0 00	3½ by 11 .....	\$12 00
2¾ by 8½ .....	0 00	3½ by 12 .....	12 00
3 by 9 .....	0 75	3¾ by 11 .....	13 25
3¼ by 10 .....	10 75	3¾ by 12 .....	13 25

## AXLES.

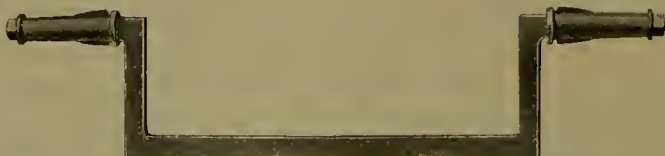


## Kinsley.

1 to 4 inches ..... Cts. per lb.

## Concord.

1 to 2 3/4 inches ..... Cts. per lb.



## Crank.

Kinsley or Concord, 1 3/4 to 3 inches, made to order.

## Half Patent.



## Best Selected Iron.

Size, inches .....	3/4, 7/8 and 1,	1 1/8,	1 1/4,	1 3/8,	1 1/2
Short Bed, per set....\$					
Long " " ....\$					
Extra for Case Hardening, per set., 7/8 to 1 1/4 inches.....\$				1 3/8 and 1 1/2 inches.	\$
Extra for Fan Tails, per set, 7/8 to 1 1/4 inches.....				1 3/8 and 1 1/2 inches.	
Extra for Coach Shape, per set, 1 1/8 and 1 1/4 inches.....					

## Steel.

Size, inches .....	3/4,	7/8,	1,	1 1/8,	1 1/4
Short Bed, per set.....\$					
Long Bed, per set.....\$					
No extra charge for Fan Tailing.					
Extra for Nickle Plated Nuts on all Half Patent Axles.....					Per set, \$

## Pipe Boxes and Axle Nuts.

All sizes, to fit above Axles, carried in stock.

When ordering Half Patent Axle Boxes, give the inside diameter of both ends, and the ENTIRE length of the Box.



## SPRINGS.



### Elliptic.

Bright, Oil Tempered.

1 <sup>1</sup> / <sub>4</sub> and 1 <sup>3</sup> / <sub>8</sub> inches, 3, 4 and 5 leaf, 34 inches and longer. . . . .	Cts. per lb.
1 <sup>1</sup> / <sub>2</sub> inches and wider, " " 34 " " . . . . .	"
1 <sup>1</sup> / <sub>4</sub> to 1 <sup>1</sup> / <sub>2</sub> inches wide, " " 28 to 30 inches long. . . . .	"
1 <sup>1</sup> / <sub>4</sub> to 1 <sup>1</sup> / <sub>2</sub> inches wide, " " 32 inches long. . . . .	"



### Side.

Bright, Oil Tempered.

1 <sup>1</sup> / <sub>2</sub> , 1 <sup>3</sup> / <sub>4</sub> and 2 inches wide, 4, 5 and 6 leaves, 48 to 62 inches long. . . . .	Cts. per lb.
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### Seat.

Painted.

Width, inches. . . . .	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>
No. of leaves. . . . .	2	3	3	2	3
Length, inches. . . . .	26	28	29	28	29
Per pair. . . . .	\$				

Bright, Oil Tempered.

Width, inches. . . . .	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>
No. of leaves. . . . .	2	2	3	3	2	2	3	3	3
Length, inches. . . . .	28	30	28	30	28	30	28	30	32
Per pair. . . . .	\$								

### Sulky.

Side Bent, Bright, Oil Tempered.

Width, inches. . . . .	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>
No. of leaves. . . . .	2	3	2	3
Length, inches. . . . .	32	32	32	32
Per pair. . . . .	\$			

PLATFORM AND SIDE-BAR SPRINGS MADE TO ORDER.

## Thoroughbrace Screws.



Diameter of screw, inches. . . . .	1 <sup>1</sup> / <sub>2</sub>	9 16	5 8	11 16	1 1/4
Per pair. . . . .	\$				

## CARRIAGE BOLTS.



## American Refined Iron.

With Turned Oval Heads and Forged Nuts

Per 100.

1-4 in.	5-16 in.	3-8 in.	7-16 in.	1-2 in.	5-8 in.	3-4 in. diam.
1 in. \$2 40	1 1/4 in. \$2 70	1 1/4 in. \$3 60	1 3/4 in. \$5 25	1 3/4 in. \$7 00	3 in. \$15 00	3 in. \$17 20
1 1/4 .... 2 40	1 1/2 .... 2 70	1 1/2 .... 3 60	2 .... 5 40	2 .... 7 20	3 1/4 .... 15 40	3 1/4 .... 17 90
1 1/2 .... 2 40	1 3/4 .... 2 80	1 3/4 .... 3 70	2 1/4 .... 5 55	2 1/4 .... 7 40	3 1/2 .... 15 80	3 1/2 .... 18 60
1 3/4 .... 2 45	2 .... 2 90	2 .... 3 70	2 1/2 .... 5 70	2 1/2 .... 7 60	3 3/4 .... 16 20	3 3/4 .... 19 60
2 .... 2 50	2 1/4 .... 3 00	2 1/4 .... 3 82	2 3/4 .... 5 85	2 3/4 .... 7 80	4 .... 16 60	4 .... 20 00
2 1/4 .... 2 55	2 1/2 .... 3 10	2 1/2 .... 3 95	3 .... 6 00	3 .... 8 00	4 1/4 .... 17 00	4 1/4 .... 21 50
2 1/2 .... 2 60	2 3/4 .... 3 20	2 3/4 .... 4 08	3 1/4 .... 6 15	3 1/4 .... 8 20	4 1/2 .... 17 40	4 1/2 .... 22 25
2 3/4 .... 2 65	3 .... 3 30	3 .... 4 20	3 1/2 .... 6 30	3 1/2 .... 8 40	4 3/4 .... 17 80	4 3/4 .... 22 75
3 .... 2 70	3 1/4 .... 3 40	3 1/4 .... 4 32	3 3/4 .... 6 45	3 3/4 .... 8 60	5 .... 18 20	5 .... 23 00
3 1/4 .... 2 75	3 1/2 .... 3 50	3 1/2 .... 4 45	4 .... 6 60	4 .... 8 80	5 1/2 .... 19 00	5 1/2 .... 24 50
3 1/2 .... 2 80	3 3/4 .... 3 60	3 3/4 .... 4 58	4 1/4 .... 6 75	4 1/4 .... 9 00	6 .... 19 80	6 .... 26 00
3 3/4 .... 2 85	4 .... 3 70	4 .... 4 70	4 1/2 .... 6 90	4 1/2 .... 9 20	6 1/2 .... 20 60	6 1/2 .... 27 50
4 .... 2 90	4 1/4 .... 3 80	4 1/4 .... 4 83	4 3/4 .... 7 05	4 3/4 .... 9 40	7 .... 21 40	7 .... 29 00
4 1/4 .... 2 95	4 1/2 .... 3 90	4 1/2 .... 4 95	5 .... 7 20	5 .... 9 60	7 1/2 .... 22 20	7 1/2 .... 30 50
4 1/2 .... 3 00	4 3/4 .... 4 00	4 3/4 .... 5 07	5 1/2 .... 7 50	5 1/2 .... 10 00	8 .... 23 00	8 .... 32 00
4 3/4 .... 3 05	5 .... 4 10	5 .... 5 20	6 .... 7 80	6 .... 10 40	8 1/2 .... 23 80	8 1/2 .... 33 50
5 .... 3 10	5 1/2 .... 4 30	5 1/2 .... 5 45	6 1/2 .... 8 10	6 1/2 .... 10 80	9 .... 24 60	9 .... 35 00
5 1/2 .... 3 20	6 .... 4 50	6 .... 5 70	7 .... 8 40	7 .... 11 20	9 1/2 .... 25 40	9 1/2 .... 36 50
6 .... 3 30	6 1/2 .... 4 70	6 1/2 .... 5 95	7 1/2 .... 8 70	7 1/2 .... 11 60	10 .... 26 20	10 .... 38 00
6 1/2 .... 3 40	7 .... 4 90	7 .... 6 20	8 .... 9 00	8 .... 12 00	11 .... 27 80	11 .... 41 00
7 .... 3 50	7 1/2 .... 5 10	7 1/2 .... 6 45	8 1/2 .... 9 30	8 1/2 .... 12 40	12 .... 29 40	12 .... 44 00
7 1/2 .... 3 60	8 .... 5 30	8 .... 6 70	9 .... 9 60	9 .... 12 80	13 .... 31 00	13 .... 47 00
8 .... 3 70	8 1/2 .... 5 50	8 1/2 .... 6 95	9 1/2 .... 9 90	9 1/2 .... 13 20	14 .... 32 60	14 .... 50 00
8 1/2 .... 3 80	9 .... 5 70	9 .... 7 20	10 .... 10 20	10 .... 13 60	15 .... 34 20	15 .... 53 00
9 .... 3 90	9 1/2 .... 5 90	9 1/2 .... 7 45	11 .... 10 80	11 .... 14 40	16 .... 35 80	16 .... 56 00
9 1/2 .... 4 00	10 .... 6 10	10 .... 7 70	12 .... 11 40	12 .... 15 20	17 .... 37 40	17 .... 59 00
10 .... 4 10	11 .... 6 30	11 .... 8 20	13 .... 12 00	13 .... 16 00	18 .... 39 00	18 .... 62 00
.....	12 .... 6 50	12 .... 8 70	14 .... 12 60	14 .... 16 80	.....	20 .... 68 00
.....	.....	13 .... 9 20	15 .... 13 20	15 .... 17 60	.....	.....
.....	.....	14 .... 9 70	.....	16 .... 18 40	.....	.....
.....	.....	15 .... 10 20	.....	17 .... 19 20	.....	.....

*San Francisco and Sacramento.**New 10*

## CARRIAGE BOLTS.



American Refined Iron.

With Oval Heads and Forged Nuts.

Per 100.

	1-4 in.	5-16 in.	3-8 in.	7-16 in.	1-2 in.	5-8 in.	3-4 in. diam.
1	\$2 40						
1¼	2 40						
1½	2 40	\$3 00					
1¾	2 45	3 10					
2	2 50	3 20	\$4 00	\$6 00	\$7 25		
2¼	2 55	3 30	4 15	6 20	7 50		
2½	2 60	3 40	4 30	6 40	7 75		
2¾	2 65	3 50	4 45	6 60	8 00		
3	2 70	3 60	4 60	6 80	8 25	\$15 00	\$17 20
3¼	2 75	3 70	4 75	7 00	8 50	15 40	17 90
3½	2 80	3 80	4 90	7 20	8 75	15 80	18 60
3¾	2 85	3 90	5 05	7 40	9 00	16 20	19 60
4	2 90	4 00	5 20	7 60	9 25	16 60	20 00
4¼	2 95	4 10	5 35	7 80	9 50	17 00	21 50
4½	3 00	4 20	5 50	8 00	9 75	17 40	22 25
4¾	3 05	4 30	5 65	8 20	10 00	17 80	22 75
5	3 10	4 40	5 80	8 40	10 25	18 20	23 00
5½	3 20	4 60	6 10	8 80	10 75	19 00	24 50
6	3 30	4 80	6 40	9 20	11 25	19 80	26 00
6½	3 40	5 00	6 70	9 60	11 75	20 60	27 50
7	3 50	5 20	7 00	10 00	12 25	21 40	29 00
7½		5 40	7 30	10 40	12 75	22 20	30 50
8		5 60	7 60	10 80	13 25	23 00	32 00
8½		5 80	7 90	11 20	13 75	23 80	33 50
9		6 00	8 20	11 60	14 25	24 60	35 00
9½		6 20	8 50	12 00	14 75	25 40	36 50
10		6 40	8 80	12 40	15 25	26 20	38 00
11			9 40	13 20	16 25	27 80	41 00
12			10 00	14 00	17 25	29 40	44 00
13				14 80	18 25	31 00	47 00
14				15 60	19 25	32 60	50 00
15					20 25	34 20	53 00
16					21 25	35 80	56 00
17						37 40	59 00
18						39 00	62 00
20							68 00

Over.

New 11

Huntington, Hopkins &amp; Co.

## CARRIAGE BOLTS.

Eagle.

Norway Iron, with Turned Oval Heads and Forged Nuts.

Revised Price List, adopted October 7th, 1884.

Per 100.				
1-8, 3-16 and 1-4 in.	5-16 in.	3-8 in.	7-16 in.	1-2 in. diam.
1 .....\$3 00	1½.....\$4 00	2 .....\$5 00	2 .....\$7 40	2 .....\$ 9 00
1¼..... 3 10	1¾..... 4 00	2¼..... 5 20	2¼..... 7 00	2½..... 9 50
1½..... 3 20	2 ..... 4 10	2½..... 5 40	2½..... 7 80	3 ..... 10 00
1¾..... 3 30	2¼..... 4 20	2¾..... 5 60	2¾..... 8 00	3½..... 10 50
2 ..... 3 40	2½..... 4 40	3 ..... 5 80	3 ..... 8 20	4 ..... 11 00
2¼..... 3 50	2¾..... 4 50	¾..... 6 00	¾..... 8 60	4½..... 11 50
2½..... 3 60	3 ..... 4 70	¾..... 6 20	4 ..... 9 00	5 ..... 12 00
2¾..... 3 70	¾..... 4 90	¾..... 6 40	4½..... 9 40	5½..... 12 50
3 ..... 3 80	¾..... 5 00	4 ..... 6 60	5 ..... 9 80	6 ..... 13 00
¾..... 3 90	¾..... 5 20	4½..... 7 00	5½..... 10 20	6½..... 13 50
¾..... 4 00	4 ..... 5 30	5 ..... 7 40	6 ..... 10 60	7 ..... 14 00
¾..... 4 10	4½..... 5 70	5½..... 7 80	6½..... 11 00	7½..... 14 50
4 ..... 4 20	5 ..... 6 00	6 ..... 8 20	7 ..... 11 40	8 ..... 15 00
4¼..... 4 35	5½..... 6 30	6½..... 8 60	7½..... 11 80	8½..... 15 50
4½..... 4 50	6 ..... 6 60	7 ..... 9 00	8 ..... 12 20	9 ..... 16 00
5 ..... 4 80	6½..... 7 00	7½..... 9 40	8½..... 12 60	9½..... 16 50
5½..... 5 10	7 ..... 7 30	8 ..... 9 80	9 ..... 13 00	10 ..... 17 00
6 ..... 5 40	7½..... 7 60	8½..... 10 20	9½..... 13 40	10½..... 17 50
6½..... 5 70	8 ..... 7 90	9 ..... 10 60	10 ..... 13 80	11 ..... 18 00
7 ..... 6 00	8½..... 8 20	9½..... 11 00	11 ..... 14 60	12 ..... 19 00
7½..... 6 30	9 ..... 8 50	10 ..... 11 40	12 ..... 15 40	14 ..... 21 00

## TIRE BOLTS.



Eagle.

Norway Iron, with Forged Nuts.

Revised Price List, adopted October 7th, 1884.

Per 100.				
1-8 and 3-16 in.	1-4 in.	5-16 in.	3-8 in.	7-16 in. diam.
1 .....\$1 50	1¼.....\$1 90	1½.....\$2 70	2 .....\$5 00	2 .....\$ 7 40
1¼..... 1 50	1½..... 2 00	1¾..... 2 85	2¼..... 5 20	2¼..... 7 60
1½..... 1 50	1¾..... 2 15	2 ..... 3 05	2½..... 5 40	2½..... 7 80
1¾..... 1 50	2 ..... 2 25	2¼..... 3 20	2¾..... 5 60	2¾..... 8 00
2 ..... 1 60	2¼..... 2 40	2½..... 3 35	3 ..... 5 80	3 ..... 8 20
2¼..... 1 65	2½..... 2 50	2¾..... 3 50	¾..... 6 20	¾..... 8 60
2½..... 1 75	2¾..... 2 65	3 ..... 3 65	4 ..... 6 60	4 ..... 9 00
2¾..... 1 80	3 ..... 2 75	¾..... 3 95	4½..... 7 00	4½..... 9 40
3 ..... 1 90	¾..... 2 90	4 ..... 4 25	5 ..... 7 40	5 ..... 9 80
¾..... 2 00	¾..... 3 00	4½..... 4 55	5½..... 7 80	5½..... 10 20
¾..... 2 05	4 ..... 3 25	5 ..... 4 90	6 ..... 8 20	6 ..... 10 60

Over.



# CARRIAGE BOLTS.

Eagle.

Norway Iron, with Turned Oval Heads and Forged Nuts.

Per 100.

1-8, 3-16 and 1-4 in.	5-16 in.	3-8 in.	7-16 in.	1-2 in. diam.
1 .....\$2 50	1 1/2 .....\$3 68	2 .....\$5 00	2 .....\$6 16	2 .....\$ 7 64
1 1/4 ..... 2 65	1 3/4 ..... 3 85	2 1/4 ..... 5 20	2 1/4 ..... 6 35	2 1/2 ..... 8 06
1 1/2 ..... 2 80	2 ..... 4 03	2 1/2 ..... 5 40	2 1/2 ..... 6 54	3 ..... 8 48
1 3/4 ..... 2 95	2 1/4 ..... 4 20	2 3/4 ..... 5 58	2 3/4 ..... 6 74	3 1/2 ..... 8 90
2 ..... 3 10	2 1/2 ..... 4 35	3 ..... 5 78	3 ..... 6 94	4 ..... 9 34
2 1/4 ..... 3 24	2 3/4 ..... 4 50	3 1/4 ..... 5 96	3 1/2 ..... 7 30	4 1/2 ..... 9 76
2 1/2 ..... 3 36	3 ..... 4 68	3 1/2 ..... 6 16	4 ..... 7 70	5 ..... 10 18
2 3/4 ..... 3 50	3 1/4 ..... 4 84	3 3/4 ..... 6 36	4 1/2 ..... 8 08	5 1/2 ..... 10 60
3 ..... 3 65	3 1/2 ..... 5 00	4 ..... 6 56	5 ..... 8 46	6 ..... 11 02
3 1/4 ..... 3 78	3 3/4 ..... 5 16	4 1/2 ..... 6 92	5 1/2 ..... 8 86	6 1/2 ..... 11 44
3 1/2 ..... 3 92	4 ..... 5 30	5 ..... 7 34	6 ..... 9 24	7 ..... 11 88
3 3/4 ..... 4 06	4 1/2 ..... 5 63	5 1/2 ..... 7 70	6 1/2 ..... 9 62	7 1/2 ..... 12 30
4 ..... 4 20	5 ..... 5 98	6 ..... 8 08	7 ..... 10 10	8 ..... 12 72
4 1/4 ..... 4 34	5 1/2 ..... 6 30	6 1/2 ..... 8 44	7 1/2 ..... 10 48	8 1/2 ..... 13 14
4 1/2 ..... 4 48	6 ..... 6 62	7 ..... 8 80	8 ..... 10 86	9 ..... 13 56
5 ..... 4 75	6 1/2 ..... 6 92	7 1/2 ..... 9 16	8 1/2 ..... 11 24	9 1/2 ..... 14 00
5 1/2 ..... 5 02	7 ..... 7 24	8 ..... 9 52	9 ..... 11 62	10 ..... 14 42
6 ..... 5 30	7 1/2 ..... 7 55	8 1/2 ..... 9 88	9 1/2 ..... 12 10	10 1/2 ..... 14 84
6 1/2 ..... 5 58	8 ..... 7 88	9 ..... 10 24	10 ..... 12 48	11 ..... 15 26
7 ..... 5 85	8 1/2 ..... 8 21	9 1/2 ..... 10 60	11 ..... 12 86	11 1/2 ..... 15 89
7 1/2 ..... 6 12	9 ..... 8 54	10 ..... 10 96	12 ..... 13 24	12 ..... 16 12
.....	.....	.....	.....	12 1/2 ..... 16 55
.....	.....	.....	.....	13 ..... 16 98
.....	.....	.....	.....	14 ..... 17 84
.....	.....	.....	.....	15 ..... 18 62

# TIRE BOLTS.



Eagle.

Norway Iron, with Forged Nuts.

Per 100.

1-8 in.	3-16 in.	1-4 in.	5-16 in.	3-8 in. diam.
1 1/4 .....\$1 50	1 1/4 .....\$1 50	1 1/4 .....\$1 85	2 .....\$2 41	2 .....\$3 20
1 1/2 ..... 1 50	1 1/2 ..... 1 50	1 1/2 ..... 1 85	2 1/4 ..... 2 50	2 1/2 ..... 3 40
1 3/4 ..... 1 50	1 3/4 ..... 1 50	1 3/4 ..... 1 85	2 1/2 ..... 2 58	3 ..... 3 60
2 ..... 1 55	2 ..... 1 55	2 ..... 1 85	2 3/4 ..... 2 66	3 1/2 ..... 3 80
.....	2 1/4 ..... 1 60	2 1/4 ..... 1 85	3 ..... 2 74	4 ..... 4 00
.....	2 1/2 ..... 1 65	2 1/2 ..... 1 85	3 1/4 ..... 2 82	4 1/2 ..... 4 20
.....	2 3/4 ..... 1 70	2 3/4 ..... 1 92	3 1/2 ..... 2 90	5 ..... 4 40
.....	3 ..... 1 75	3 ..... 2 00	3 3/4 ..... 2 98	.....
.....	.....	3 1/4 ..... 2 08	4 ..... 3 06	.....
.....	.....	3 1/2 ..... 2 16	4 1/2 ..... 3 22	.....
.....	.....	.....	5 ..... 3 38	.....

## MACHINE BOLTS.



Per 100.

Length, in.	1-4 in.	5-16 in.	3-8 in.	7-16 in.	1-2 in.	5-8 in.	3-4 in.	7-8 in.	1 in.
1	\$3 80	\$4 00	\$4 75	\$5 50	\$6 00	\$9 50			
1 $\frac{1}{4}$	3 90	4 10	4 87	5 55	6 50	9 75			
1 $\frac{1}{2}$	3 90	4 10	4 87	5 55	6 50	9 75	\$15 10		
1 $\frac{3}{4}$	4 00	4 25	5 02	5 70	6 75	10 00	15 50		
2	4 00	4 25	5 02	5 70	6 75	10 00	15 50	\$20 87	\$30 75
2 $\frac{1}{4}$	4 10	4 40	5 17	5 85	6 87	10 25	15 90	21 50	31 62
2 $\frac{1}{2}$	4 10	4 40	5 17	5 85	6 87	10 25	15 90	21 50	31 62
2 $\frac{3}{4}$	4 20	4 55	5 32	6 00	7 00	10 50	16 20	22 12	32 50
3	4 20	4 55	5 32	6 00	7 00	10 50	16 20	22 12	32 50
3 $\frac{1}{4}$	4 35	4 70	5 47	6 15	7 25	10 75	16 50	22 75	33 37
3 $\frac{1}{2}$	4 35	4 70	5 47	6 15	7 25	10 75	16 50	22 75	33 37
3 $\frac{3}{4}$	4 50	4 85	5 62	6 30	7 50	11 25	16 80	24 62	36 00
4	4 50	4 85	5 62	6 30	7 50	11 25	16 80	24 62	36 00
4 $\frac{1}{2}$	4 65	5 00	5 74	6 45	7 75	11 50	17 15	25 25	36 87
5	4 80	5 15	5 86	6 60	8 00	11 75	17 50	25 75	37 75
5 $\frac{1}{2}$	4 95	5 30	5 98	6 75	8 25	12 00	17 85	26 37	38 62
6	5 10	5 45	6 10	6 90	8 50	12 50	18 25	27 12	39 50
6 $\frac{1}{2}$	5 25	5 60	6 22	7 10	9 00	13 00	18 70	27 75	40 37
7	5 40	5 75	6 34	7 30	9 25	13 25	19 20	28 37	41 25
7 $\frac{1}{2}$	5 55	5 90	6 46	7 50	9 50	13 75	19 70	29 00	42 12
8	5 70	6 05	6 58	7 75	10 00	14 00	20 25	29 62	43 00
8 $\frac{1}{2}$	5 85	6 20	6 66	8 00	10 25	14 75	20 60	30 25	43 87
9	6 00	6 35	6 75	8 25	10 50	15 50	21 00	30 87	44 75
9 $\frac{1}{2}$	6 15	6 50	7 00	8 50	11 25	16 25	21 50	31 50	45 62
10	6 30	6 65	7 25	8 75	12 00	17 00	22 00	32 25	46 50
10 $\frac{1}{2}$			7 75	9 25	12 50	17 65	22 50	32 87	47 37
11			8 00	10 25	13 00	18 25	23 00	33 50	48 25
11 $\frac{1}{2}$			8 50	10 75	13 50	19 50	23 50	34 12	49 12
12			9 00	11 50	14 00	20 00	24 00	35 12	50 00
13					14 37	20 75	25 25	36 75	51 75
14					14 75	21 50	26 50	37 87	53 50
15					15 12	22 25	27 75	38 50	55 25
16					15 50	23 00	29 00	40 25	57 00
17					16 00	23 75	30 25	41 75	58 75
18					16 50	24 62	31 50	43 12	60 50
19					17 00	25 37	32 75	44 87	62 25
20					17 37	26 12	34 00	46 62	63 00
21					17 75	26 87	35 00	48 25	64 75
22					18 25	27 62	36 00	49 50	66 50
23					18 62	28 37	36 50	50 50	68 25
24					19 12	29 25	37 50	51 12	71 00

# LAG SCREWS.



Length, in.	Per 100.					
	5-16 in.	3-8 in.	7-16 in.	1-2 in.	5-8 in.	3-4 in.
1 3/4	\$2 80	\$3 20	\$4 15	\$4 45		
2	2 90	3 30	4 25	4 90		
2 1/2	3 10	3 50	4 50	5 00	\$7 90	
3	3 30	3 70	4 75	5 30	8 30	\$12 40
3 1/2	3 50	3 90	5 00	5 70	8 70	12 70
4	3 70	4 10	5 25	6 10	9 10	13 10
4 1/2	3 90	4 30	5 50	6 60	9 60	13 60
5	4 10	4 50	5 75	7 10	10 10	14 10
5 1/2	4 30	4 70	6 00	7 60	10 60	14 60
6	4 50	4 90	6 25	8 10	11 10	15 10
6 1/2			6 50	8 65	11 60	15 60
7			6 75	9 20	12 20	16 40
7 1/2			7 00	9 85	12 85	17 00
8			7 25	10 60	13 55	18 00
8 1/2			7 50	11 30	14 20	18 80
9			7 75	12 00	14 90	19 60
9 1/2				12 60	15 60	20 40
10				13 20	16 30	21 20
10 1/2				13 80	17 00	22 00
11				14 40	17 70	22 80
11 1/2				15 00	18 40	23 60
12				15 75	19 10	24 40

# BOLT ENDS.



Diameter, inches.	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2
Length . . . . .	8	9	10	11	12	13	14	15	16	17	18	18	18
Cts. per lb. . . . .	10	14	12	12	12	12	14	14	14	16	16	16	16

## PLOW BOLTS.

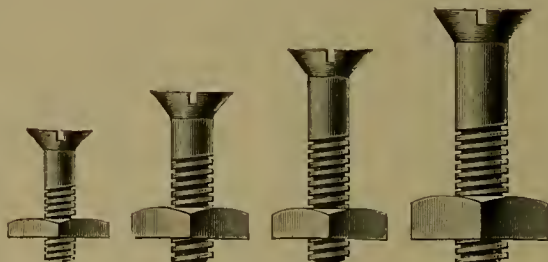


Key Head, and Short Square under Head.

Per 100.

Length, ins.	1	1 1-4	1 1-2	1 3-4	2	2 1-4	2 1-2	2 3-4	3
5-16	\$1 70	\$1 70	\$1 80	\$1 90	\$2 00	\$2 10	\$2 20	\$2 30	\$2 40
3/8	2 00	2 00	2 10	2 20	2 30	2 40	2 50	2 60	2 70
7-16	2 60	2 60	2 75	2 90	3 05	3 20	3 35	3 50	3 65
1/2	3 50	3 50	3 70	3 90	4 10	4 30	4 50	4 70	4 90
5/8	5 70	5 70	6 00	6 30	6 60	6 90	7 20	7 50	7 80

## STOVE BOLTS.



Flat Head.

Per 100.

Length, ins.	3-4	7-8	1	1 1-4	1 1-2	1 3-4	2
3-16							
1/4							

## STEP BOLTS.



1/4 inch diameter, 1 1/4, 1 1/2, 1 3/4 and 2 inches long,  
Per 100.....\$

5-16 inch diameter, 1 1/2, 1 3/4 and 2 inches long,  
Per 100.....\$

## WIIFFLETREE BOLTS.



Spur Pattern.



Bent Pattern.

Black. Made of Norway Iron.

5-16 inch diameter, 3 inches long, per dozen.....						\$	Spur.	\$	Bent.
5-16	"	"	3½	"	"	.....			
5-16	"	"	4	"	"	.....			
5-16	"	"	4½	"	"	.....			
¾	"	"	3½	"	"	.....			
¾	"	"	4	"	"	.....			
¾	"	"	4½	"	"	.....			



## SHAFT BOLTS.

Black. 3-16 and 1-4 Inch Diameter.

Length, inches .....	1¼,	1½,	1¾,	2.
Per 100 .....	\$			

## COUPLING BOLTS.



Coupling Bolt.



Cone Head Bolt.

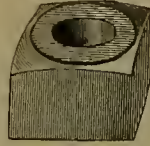
Diameter, inches .....	5-16,	¾,	7-16,	1½,	5/8.
Per 100 .....	\$				

## CONE HEAD BOLTS.

¼ inch diameter, 2 inches long.	5 16 inch diameter, 2¼ long.	5 16 inch diameter, 2½ inches long
Per 100 .....	\$	



## SQUARE NUTS.



Width, inches.	Thickness, inches.	Diam. Hole, inches.	Diam. Bolt, inches.	Cts. per pound.
1-3/32	3-16	5-32	3-16	20
1/2	1/4	7-32	1/4	20
5/8	5-16	9-32	5-16	17
3/4	3/8	11-32	3/8	15
7/8	7-16	13-32	7-16	13 1/2
1	1/2	7-16	1/2	13 1/2
1 1/8	1/2	7-16	1/2	12 1/2
1 1/8	5/8	9-16	5/8	12 1/2
1 1/4	5/8	9-16	5/8	12
1 3/8	3/4	11-16 or 21-32	3/4	12
1 1/2	3/4	11-16 or 21-32	3/4	11 1/2
1 5/8	7/8	13-16 or 25-32	7/8	11 1/2
1 3/4	7/8	13-16 or 25-32	7/8	11 1/2
1 3/4	1	7/8 or 27-32	1	11 1/2
2	1	7/8 or 27-32	1	11 1/2
2	1 1/8	15-16 or 1	1 1/8	11 1/2
2 1/4	1 1/8	15-16 or 1	1 1/8	11 1/2
2 1/4	1 1/4	1 1-16 or 1 1/8	1 1/4	12 1/2
2 1/2	1 1/4	1 1-16 or 1 1/8	1 1/4	12 1/2
2 3/4	1 3/8	1 3-16 or 1 1/4	1 3/8	12 1/2
3	1 1/2	1 5-16 or 1 3/8	1 1/2	13
3 1/4	1 5/8	1 7-16	1 5/8	13
3 1/2	1 3/4	1 9-16	1 3/4	14
3 3/4	1 7/8	1 11-16	1 7/8	14
4	2	1 13-16	2	14

## HEXAGON NUTS.



## Standard Sizes.

Width, inches.	Thickness, inches.	Diam. Hole, inches.	Diam. Bolt, inches.	Cts. per pound.
1/2	1/4	7-32	1/4	30
5/8	5-16	9-32	5-16	25
3/4	3/8	11-32	3/8	20
7/8	7-16	3/8	7-16	18
1	1/2	7-16	1/2	16
1 1/8	9-16	1/2	9-16	16
1 1/4	5/8	9-16	5/8	15
1 1/2	3/8	21-32	3/4	14 1/2
1 5/8	1	25-32	7/8	14 1/2
1 3/4	1 1/8	27-32	1	14 1/2
2	1 1/4	15-16	1 1/8	14 1/2
2 1/4	1 3/8	1 1-16	1 1/4	15 1/2
2 1/2	1 1/2	1 3-16	1 3/8	15 1/2
2 3/4	1 5/8	1 9-32	1 1/2	15 1/2
3 1/4	1 7/8	1 9-16	1 3/4	16
3 1/2	2	1 13-16	2	17

## WASHERS.



Diameter, inches.	Diam. Hole, inches.	Thickness Wire Gauge.	Diam. Bolt, inches.	Cts. per pound.
5/8	1/4	No. 18	3-16	25
5/8	5-16	" 16	1/4	22
3/4	5-16	" 16	1/4	19
7/8	3/8	" 16	5-16	17
1	7-16	" 14	3/8	15
1 1/8	1/2	" 14	7-16	15
1 1/4	1/2	" 14	7-16	13
1 3/8	9-16	" 12	1/2	13
1 1/2	5/8	" 12	9-16	12 1/2
1 3/4	11-16	" 10	5/8	12 1/2
2	13-16	" 10	3/4	12 1/2
2 1/4	15-16	" 9	7/8	12 1/2
2 1/2	1 1-16	" 9	1	12 1/2
2 3/4	1 1/4	" 9	1 1/8	12 1/2
3	1 3/8	" 9	1 1/4	12 1/2
3 1/2	1 1/2	" 8	1 3/8	13 1/2
3 3/4	1 5/8	" 8	1 1/2	13 1/2
4	1 7/8	" 8	1 3/4	13 1/2
4 1/2	2 1/8	" 8	2	13 1/2

100 lbs. in a box. 5 lb. boxes 1/2 ct. per lb. extra.

# RIVETS.



## Flat Head.

Norway Iron.

In Papers of 1000.

In Bulk.

BLACK.		TINNED.		BLACK.		TINNED.	
Size.	Per 1000.	Size.	Per 1000.	Size.	Cts. per lb.	Size.	Cts. per lb.
8 OZ.	\$0 20	8 OZ.	\$0 24	8 OZ.	38	8 OZ.	45
10 "	22	10 "	25	10 "	34	10 "	40
12 "	24	12 "	28	12 "	31	12 "	37
14 "	26	14 "	30	14 "	29	14 "	35
1 lb.	27	1 lb.	33	1 lb.	26	1 lb.	32
1 1/4 "	29	1 1/4 "	37	1 1/4 "	23	1 1/4 "	29
1 1/2 "	32	1 1/2 "	41	1 1/2 "	21	1 1/2 "	27
1 3/4 "	36	1 3/4 "	47	1 3/4 "	20	1 3/4 "	26
2 "	40	2 "	52	2 "	19	2 "	25
2 1/2 "	47	2 1/2 "	63	2 1/2 "	18	2 1/2 "	24
3 "	53	3 "	72	3 "	17	3 "	23
3 1/2 "	58	3 1/2 "	80	3 1/2 "	16	3 1/2 "	22
4 "	64	4 "	88	4 "	15	4 "	21
5 "	75	5 "	1 05	5 "	14	5 "	20
6 "	90	6 "	1 26	6 "	14	6 "	20
7 "	1 05	7 "	1 50	7 "	14	7 "	20
8 "	1 20	8 "	1 70	8 "	14	8 "	20
9 "	1 27	9 "	1 80	9 "	13	9 "	19
10 "	1 40	10 "	2 00	10 "	13	10 "	19
12 "	1 70	12 "	2 40	12 "	13	12 "	19
14 "	1 90	14 "	2 75	14 "	12 1/2	14 "	18 1/2
16 "	2 20	16 "	3 10	16 "	12 1/2	16 "	18 1/2
				1 1/4 by 1/2 to 1 in.	13		
				5-16 by 1/2 to 1 in.	12 1/2		
				3/8 by 1/2 to 1 in.	11 1/2		



## Section.

No. 6 Wire.

Length, inch.	7-16	1/2	1 1/2	3 1/4
Cts. per lb.				

In Papers of One Pound.

## RIVETS.



## Oval Head Carriage.

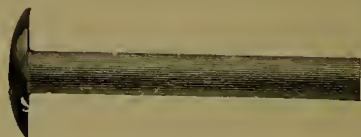
Norway Iron.

Diameter, inch.....	3-16	$\frac{1}{4}$	5-16	$\frac{3}{8}$
Length, inches.....	$\frac{3}{8}$ to 3	$\frac{3}{8}$ to 4	$\frac{3}{8}$ to $1\frac{1}{2}$	$\frac{1}{2}$ to 2
Cts. per lb.....	14	13	$12\frac{1}{2}$	11 $\frac{1}{2}$

## Oval Head Tire.

California Hand Made.

$\frac{1}{4}$  inch diameter by  $1\frac{1}{2}$  to  $3\frac{1}{2}$  inches long.... Cts. per lb.  
 5-16 inch diameter by 2 to 4 inches long..... "



## Cone Head Boiler.

Diameter, inch.....	$\frac{3}{8}$	7-16	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Cts. per lb.....					

## Copper.



Wire Gauge.....	5	6	7	8	9	10	12
Lengths, inches.....	$\frac{1}{2}$ to 1	$\frac{1}{2}$ to 1	$\frac{3}{8}$ to 1	$\frac{3}{8}$ to $1\frac{1}{2}$	$\frac{3}{8}$ to 1	$\frac{3}{8}$ to 1	$\frac{1}{4}$ to $\frac{3}{4}$
Cts. per pound.....	49	49	49	50	52	54	58

One pound in a box.

## Brass Rivets.

For Locomotive Jackets..... Cts. per lb.

## BURRS.



## For Oval Head Carriage Rivets.

Norway Iron.

For 3-16 and  $\frac{1}{4}$  inch Rivets..... Cts. per lb.

## For Oval Head Tire Rivets.

Wrought Iron—Oval.

For  $\frac{1}{4}$  and 5-16 inch Rivets..... Cts. per lb.

## For Copper Rivets.

Nos. 5 to 12..... Cts. per lb.



## CHAIN.



### Straight Short Link.

Inch.....	3-16	¼	5-16	⅜	7-16	½	9-16	⅝	11-16	¾	7/8	1
Cts. per lb.....												



### Twisted Link.

3-16 inch.....	Cts. per lb.	¼ inch.....	Cts per lb.
----------------	--------------	-------------	-------------

### Trace.

Straight Link, 6½ feet long, 10 links to foot, No. 2 Wire, with Ring or Hook..	Per pair, 3
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## REPAIR LINKS.



### Wrought Iron.

FOR REPAIRING OR CONNECTING CHAIN

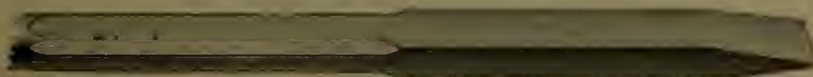
Nos. ....	1	2	3	4	5	6	8
Diameter, inch.....	3-16	¼	5-16	⅜	7-16	1/2	5/8
Per gross.....	\$						

## TURNBUCKLES.



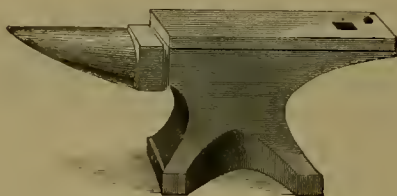
Diameter, inches.....	3/8	7-16	1/2	5/8	¾	7/8	1	1 1/4	1 1/2	1 3/4	2
Each .....	\$1 00	1 25	1 25	1 50							
Cts. per lb.....					20	18	17	17	16	16	15

## CROW BARS.



Iron, Steel pointed, 12 to 20 lbs each.....	Cts. per lb.
All Steel, 12 to 20 lbs. each.....	"

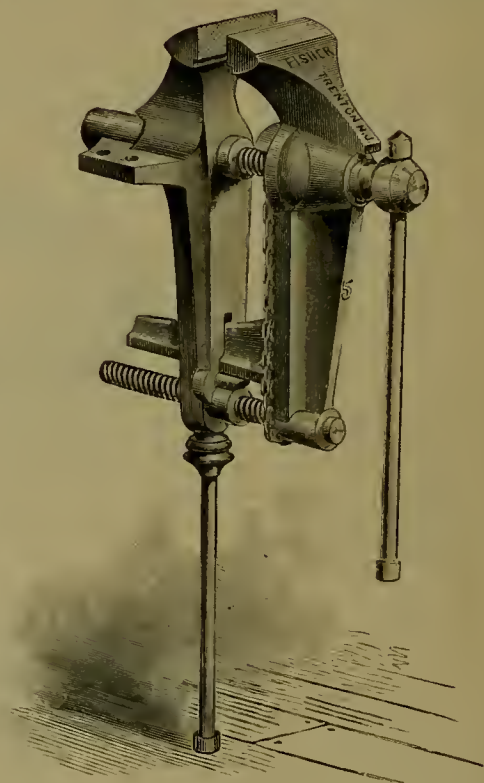
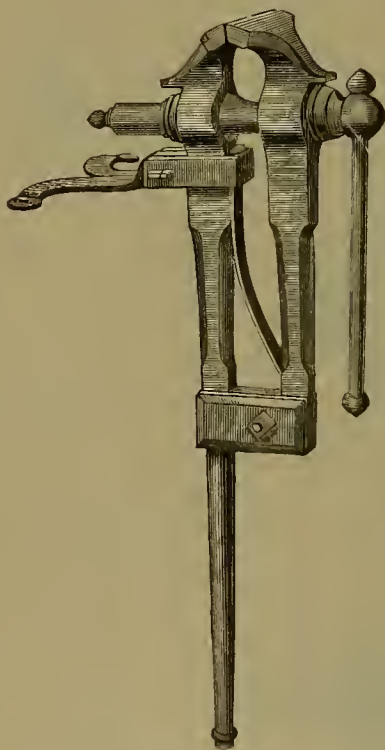
## ANVILS.



Peter Wright's.

Weight, lbs. ....	30 to 40	41 to 50	51 to 60	61 to 70	71 to 80	81 to 250	over 250
Cts. per lb. ....							

## VISES.



Peter Wright's.

Solid Box.

35 to 150 lbs. each	.....	Cts. per lb.
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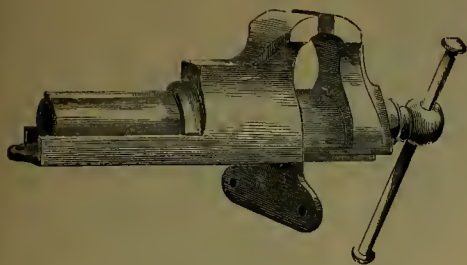
Fisher and Norris.

Double Screw, Parallel.

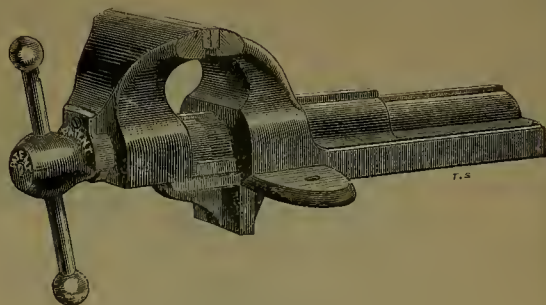
Nos. ....	3	4	5	6
Weight, lbs. ....	90	120	150	160
Each. ....	\$16 00	20 50	27 00	30 00

Extra SCREWS and BOXES can be had for above Vises.

# VICES.



Wilson's.



Parker's.

## Oval Slide.

### WILSON'S.

Nos.....	00	0	1	2	3	4
Weight, lbs.....	7 1/4	10 1/2	16 1/2	24	35 1/4	52 1/2
Length of Jaw, inches.....	2 1/4	2 1/4	3	3 1/2	4	4 1/2
Each.....	\$2 50	2 70	3 60	4 65	6 70	9 65

### PARKER'S.

Nos.....	30	31	32	33	34
Weight, lbs.....	8 1/2	13	19	22	28
Length of Jaw.....	2 5/8	3	3 1/4	3 1/2	4
Each.....	\$2 50	3 00	4 25	4 75	6 50



Parallel.



Parallel Swivel.

### PARKER'S.

### Parallel.

Nos.....	000	1	2	3	4	5
Weight, lbs.....	23	34	42 1/2	61	83	127
Length of Jaw, inches.....	3 1/4	3 1/2	4 1/4	4 1/4	5 1/2	6 1/2
Each.....	\$7 00	8 00	10 00	13 00	19 00	27 00

### Parallel Swivel.

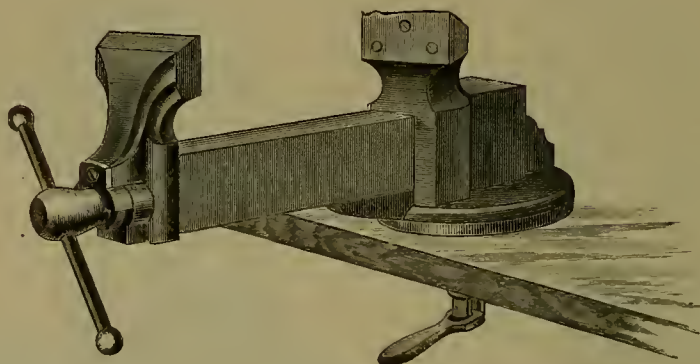
Nos.....	10	20	21	22	23	24	25
Weight, lbs.....	8	8 1/2	24	38	49	67	90
Length of Jaw, inches.....	1 7/8	2 3/8	3 1/2	3 3/4	4 1/2	4 1/2	5
Each.....	\$4 50	5 75	8 00	10 00	12 50	16 50	23 00

# VICES. PARKER'S.



## Coachmakers'.

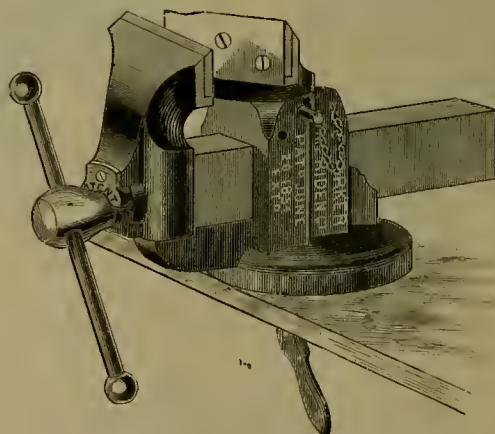
No. 40, 4  $\frac{7}{8}$  inch Jaws, opens 9 inches..... Each, \$11 50



## Coachmakers'.

Swivel.

No. 46, 4  $\frac{1}{8}$  inch Jaws, opens 8 inches..... Each, \$14 00



## Coachmakers'.

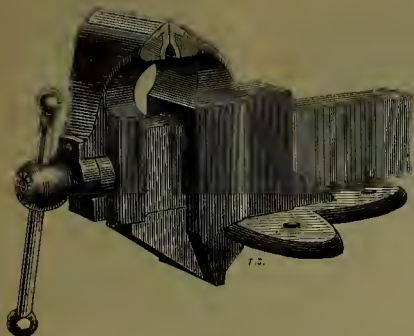
Swivel Jaw.

No. 41, 4  $\frac{1}{2}$  inch Jaws, opens 9 inches..... Each, \$16 00

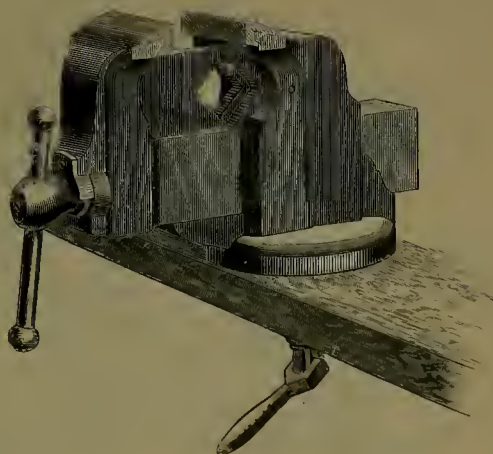


# VICES.

PARKER'S.



Filers.



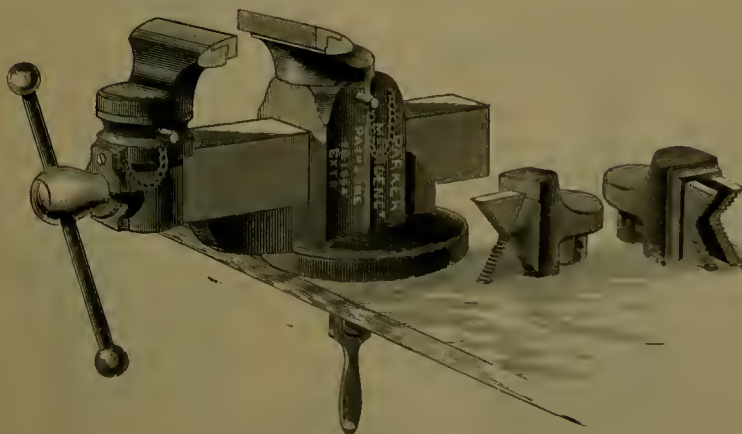
Combination Pipe.

## Filers'.

Nos. ....	42	42½	44 (Swivel.)
Weight, lbs. ....	35	30	38½
Length of Jaw, inches. ....	4¼	3¼	4¼
Each. ....	\$8 50	8 00	10 00

## Combination Pipe.

No. 87, weight 43 lbs., for holding 2 inch pipe and under. ....	Each, \$14 00
No. 88, weight 63 lbs., for holding 3 inch pipe and under. ....	" 17 00

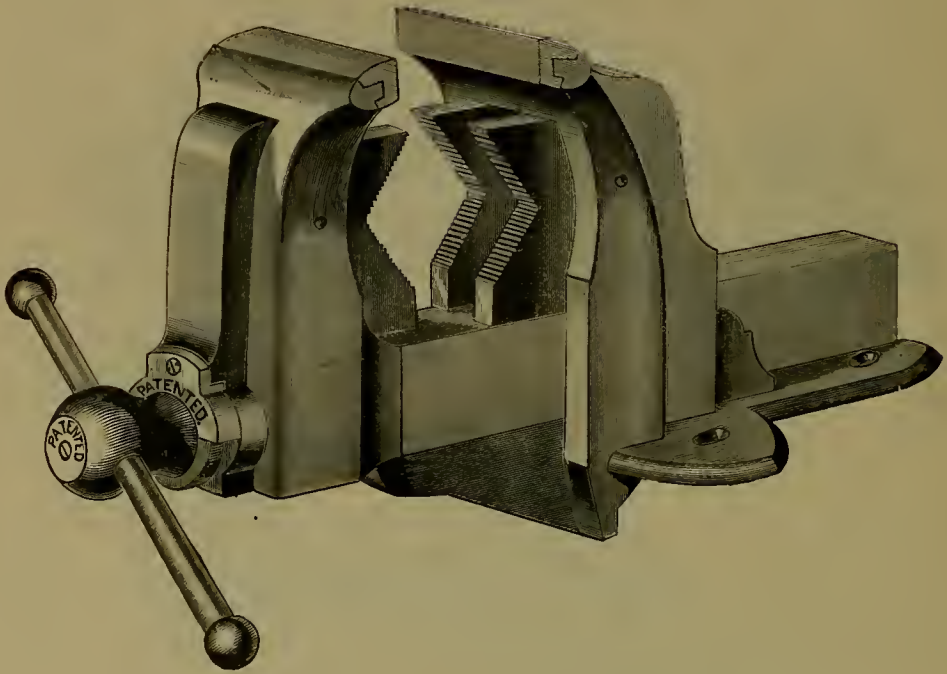


## Combination Pipe.

Swivel, with Interchangeable Jaws.

No. 86, weight 79 lbs., for holding 3 inch pipe and under. ....	Each, \$17 00
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## VICES. PARKER'S.



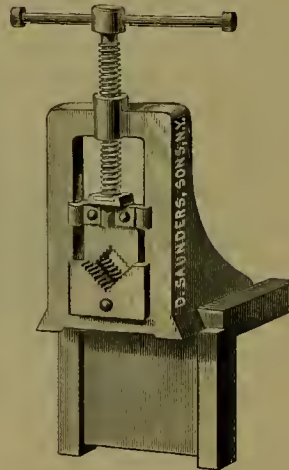
### Combination Pipe.

No. 88½, weight 90 lbs., for holding 4 inch pipe and under.....	Each, \$31 50
No. 89, weight 140 lbs., for holding 6 inch pipe and under.....	" 40 00

## SAUNDERS.



Plate.



Angle

### Malleable Iron Pipe.

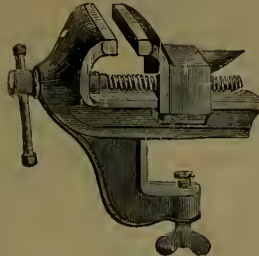
No. 1, Plate, weight 15 lbs., for holding 2 inch pipe and under.....	Each, \$ 8 00
No. 1, Angle, for holding 2 inch pipe and under.....	" 12 00
No. 2, Angle, for holding 3 inch pipe and under.....	" 16 00



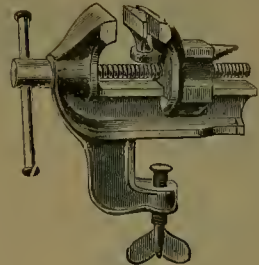
# VISES.



Hand.



Bench, Plain Jaw.



Bench, Swivel Jaw.

## Hand.

Length, inches, best cast steel.....	4	4 1/2	5	5 1/2
Per dozen.....	\$			

## Bench.

### BONNEY'S.

No.		Width of Jaws.	Weight	Price.
0	Iron Jaw.....	1 3/8 inch.....	1 lb.	Each, \$0 35
1	" ".....	1 1/2 inch.....	1 1/2 lb	" 0 50
1 1/2	" ".....	1 5/8 inch.....	1 3/4 lb..	" 0 58
2	" ".....	2 inch.....	2 1/2 lb..	" 0 70
2 1/2	Steel Jaw.....	2 inch.....	2 1/2 lb	" 0 95
3	Iron Jaw Swivel.....	2 inch.....	2 3/4 lb	" 1 00
4	" ".....	2 3/4 inch.....	5 lb	" 1 25
5	" " Swivel.....	2 3/4 inch.....	5 lb	" 1 50
6	Steel Jaw.....	2 3/4 inch.....	5 lb	" 1 50
7	" " Swivel.....	2 3/4 inch.....	5 lb	" 1 75
8	" ".....	2 3/4 inch.....	5 lb	" 1 50
9	" " Swivel.....	2 3/4 inch.....	5 lb	" 1 75

# TIRE GAUGE.

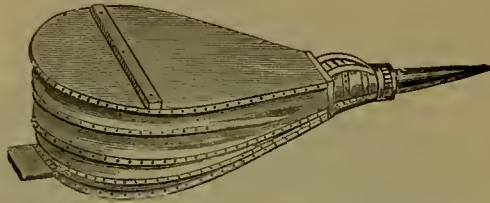


Nickle Plated.

- No. 1, Graduated, with Pencil  
No. 2, Graduated, without Pencil

Each \$  
..

## BLACKSMITHS' BELLOWS.



## Standard.

Size, inches. . . . .	20	22	24	26	28	30	32	34	36	38	40
Weight, lbs. . . . .	42	46	50	60	63	70	85	95	100	125	135
Each . . . . .	\$10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	19.00	21.00	22.50

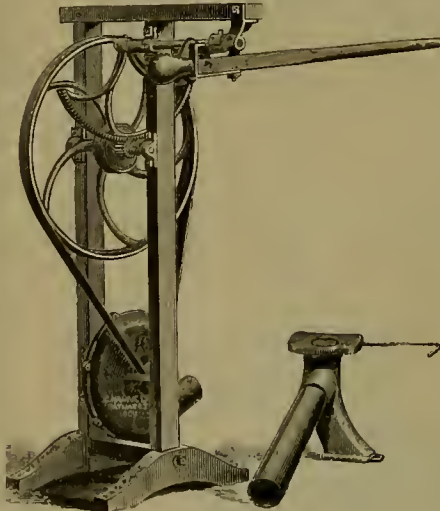
## Extra.

Size, inches. . . . .	36	38	40	42	44
Weight, lbs. . . . .	125	135	150	180	190
Each . . . . .	\$27.00	28.50	30.00	31.50	44.00

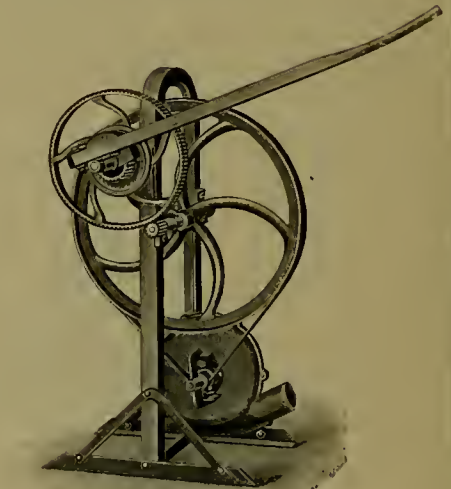
## BELLOWS NAILS.

Galvanized . . . . . Cts. per lb

## BLACKSMITHS' BLOWERS.



Buffalo.



Empire.

## Buffalo.

Is Operated by a Lever which has the Swivel Motion, most natural to the Blacksmith.

Complete with Tuyere . . . . . Each, \$

## Empire.

Wrought Iron Frame, no Wood or Leather excepting the Handle and Belt. Weight, 130 lbs.

Complete with Tuyere . . . . . Each, \$

## PORTABLE FORGES.



No. 7, with Half Hood.



Nos. 9 and 10, with Hood.

Pipe Legs, Swivel Handle.

No. 7, with Half Hood, Fan 14 in., size 28x40 in., height 25 in., weight 250 lbs.	Each, \$
No. 9, without Hood, Fan 10 in., Fire-pan 21x27, height 29 in., weight 150 lbs.	"
No. 10, " " 8 in., " 17x19, " 29 in., " 90 lbs.	"
No. 9, with " 10 in., " 21x27, " 29 in., " 160 lbs.	"
No. 10, " 8 in., " 17x19, " 29 in., " 110 lbs.	"

## TUYERE IRONS.



Clark's Patent.

Nos	2	3
Each	\$3 50	4 00

Harris'.

Each..... \$

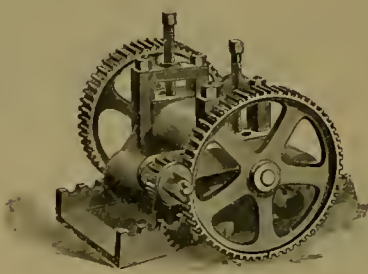
Duck Nest.

Each..... \$

Box.

With triangular ball.....	Each, \$
With grates, having one, two and three openings.....	"
FORGE BACK AND NOZZLE.....	"

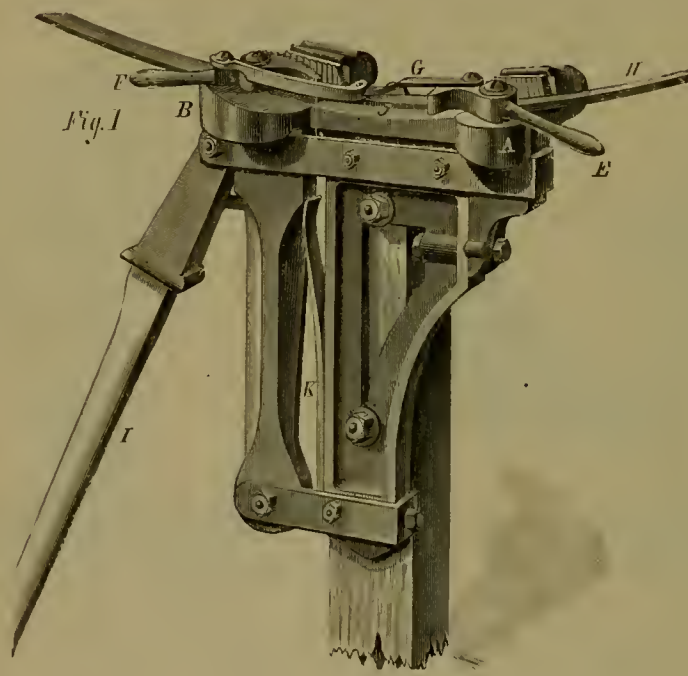
TIRE BENDERS.



Kinsley.

No. 3, for light and medium work. . . . . Each, \$  
No. 4, for heavy work . . . . . “

TIRE UPSETTERS.



Excelsior.



Little Giant.

Will Upset Tire 2x3-4 inches.

Each. . . . . \$30 00 | Each. . . . . \$



# COMBINED PUNCH AND SHEARS.

With Tire Upsetter.

## Black Giant.

Weight, 440 lbs.; each.....\$75 00

Splitting Shears, \$5 00 extra.

Every machine is tested by cutting off a bar of iron three inches wide and one-half inch thick, also three-fourths inch square, and punching a plate three eighths thick.

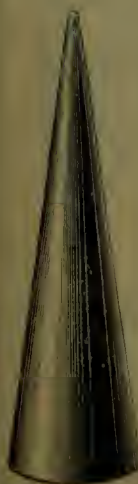


## Cones or Mandrels.

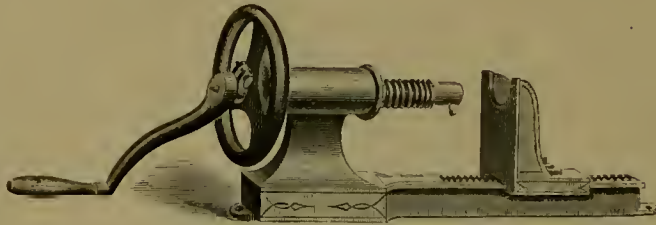
Size	Small.	Medium.	Large.
Diameter bottom, inches.....	11	14	16
Diameter top ".....	2 3/4	2 1/2	2 1/4
Height, feet.....	4	4	4 1/2
Weight, lbs., about.....	185	210	240
Per lb.....	Cts.		

## Swage Blocks.

Size	Inches Square	Inches Thick	Weight lbs., about
Small.....	13 1/2	4 1/4	112
Medium.....	14 1/2	4 3/4	150
Large.....	16	5 1/2	220
Per lb.....	Cts.		

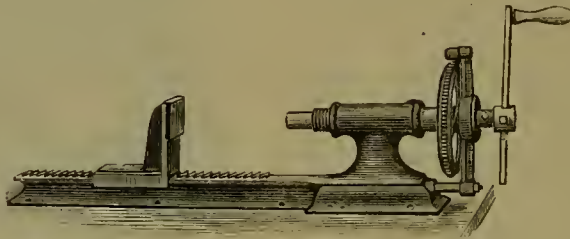


## DRILLS.



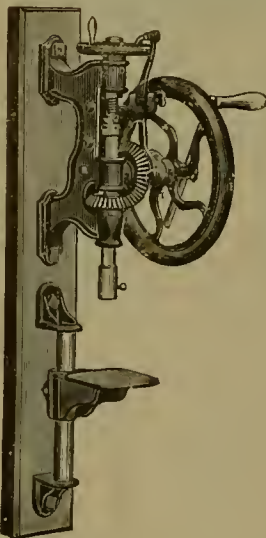
## Horizontal.

No. 4, Without Feed, length 26 inches, weight 33 lbs.....	Each, \$6 00
No. 4, With Feed, " 26 " .....	" 6 75



No. 2.

No. 2, Without Balance Wheel, length, 33 inches, weight, 45 lbs.....	Each, \$10 00
No. 2, With Balance Wheel, " 33 " .....	" 13 00
No. 5, With Balance Wheel, length 44 inches, weight, 115 lbs.....	" 20 00



No. 1.

## Upright, Self-Feeding.

No. 1, Length 42 inches; weight 98 lbs. Each, \$28 00

Drills from 1-8 to 3-4 inch Hole; will Drill to Center  
of a 10-inch circle.

No. 6, Hand; Length 44 inches; weight,  
120 lbs..... " 34 00

No. 6, Hand and Power, with one pulley, " 35 50

No. 6, Hand and Power, with two pulleys, " 37 00

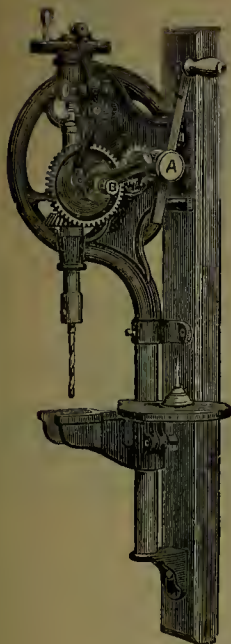
Drills from 1-8 to 3-4 inch Hole; will Drill to Center  
of a 10-inch circle.



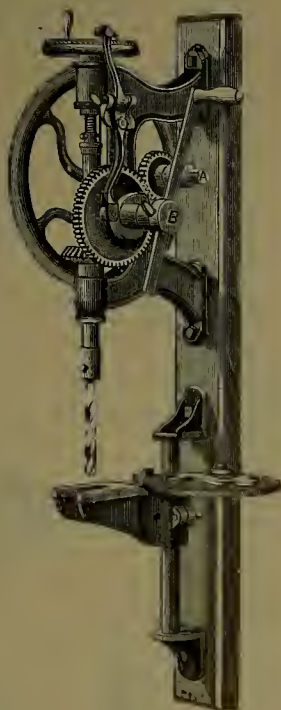
No. 6.



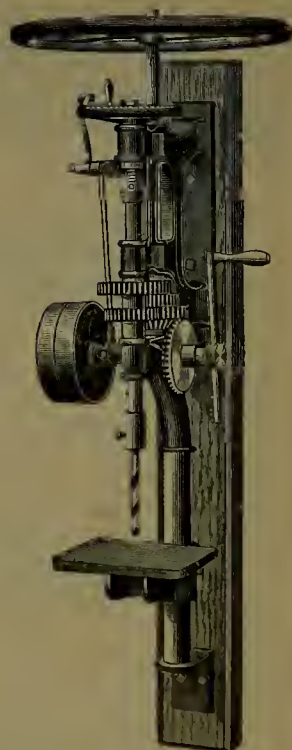
# DRILLS.



No. 1.



No. 2.



No. 3.

## Upright, Self-Feeding.

No. 1½, hand; length, 44 inches, weight 120 lbs.....	Each, \$34 00
No. 1½, hand and power; length, 44 inches.....	" 37 00

This machine has nearly a continuous feed which can be adjusted to three rates of speed. By this arrangement the capacity of the drill is increased nearly one-third.

Drills from 1-8 to 1 inch Hole; will Drill to the Center of a 10-inch circle.

No. 2, hand; length, 54 inches, weight 160 lbs.....	Each, \$48 00
No. 2, hand and power; with one pulley.....	" 49 50
No. 2, " " " two " .....	" 51 00

No. 2 is similar to No. 1 1-2; Drills from 1-8 to 1 1-4 inch Hole; will Drill to the Center of a 15-inch circle.

No. 3, hand; weight 250 lbs.....	Each, \$75 00
No. 3, hand and power, with two pulleys..	" 79 00

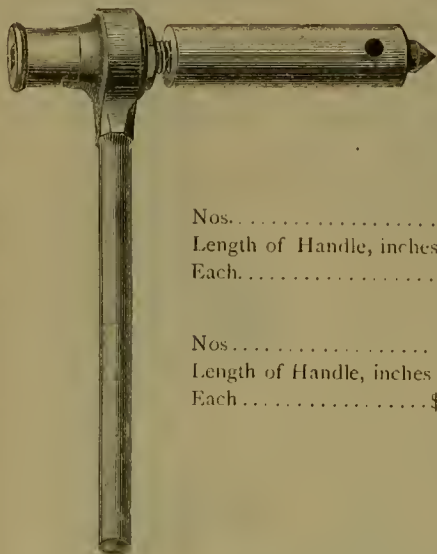
No. 3 has cut gears so arranged that a quick or slow motion may be given the drill as desired.

Drills from 1-4 to 1 1-2 inch Hole; will Drill to the Center of a 19-inch circle.

All our Drills have Sockets 41-64 inches, suitable for Coe's Twist Drills.

## DRILLS.

## Ratchet.



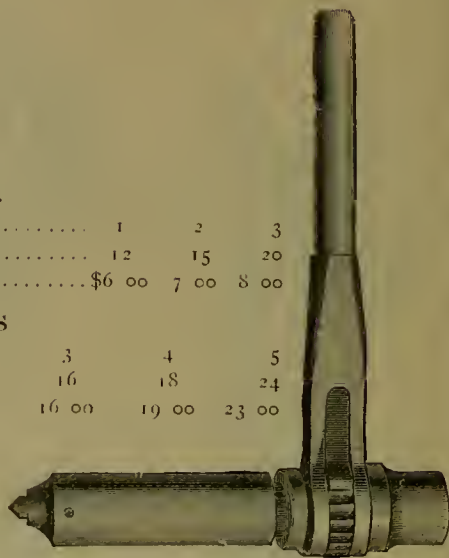
P. S. &amp; W.

## P. S. &amp; W.

Nos. ....	1	2	3
Length of Handle, inches. ....	12	15	20
Each. ....	\$6 00	7 00	8 00

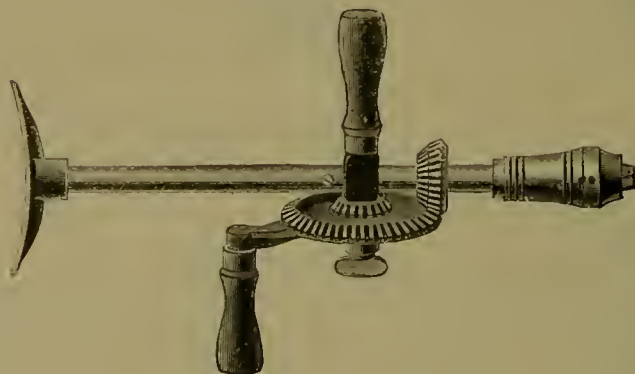
## PACKER'S

Nos. ....	1	2	3	4	5
Length of Handle, inches. ....	10	12	16	18	24
Each. ....	\$10 50	13 50	16 00	19 00	23 00



Packer's.

## Breast.



No. 10, Nickle Plated. ....	Per dozen, \$36 00
No. 12, " " ....	" 36 00
No. 13, " " ....	" 30 00

## Hand.



No. 1 B.



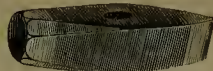
Chicopee.

No. 1, Single Gear, with six drills. ....	Per doz., \$15 00	Complete, with drills. ....	Each, \$2 60
No. 1 B., Double Gear, with six drills. ....	" 18 00	Complete, with drills and screw driver. ....	" 2 70

# BLACKSMITHS' TOOLS.



Hot.



Cold.

## Chisels.

Solid Cast Steel.....Cts. per lb., 50



Flatter.



Set Hammer.

## Flatters.

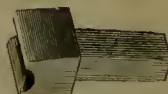
Solid Cast Steel, 2 to 4 inch face.....Cts. per lb., 50

## Set Hammers.

Solid Cast Steel.....Cts. per lb., 50



Top



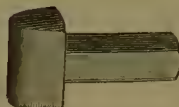
Bottom.

## Swages.

Solid Cast Steel,  $\frac{1}{4}$  to  $3\frac{1}{2}$  inches.....Cts. per lb., 50



Top.



Bottom.

## Fullers.

Solid Cast Steel,  $\frac{1}{4}$  to 2 inches.....Cts. per lb., 50



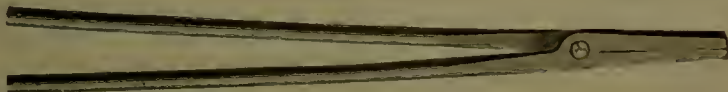
## Hardies.

Solid Cast Steel, 1 to  $2\frac{1}{2}$  inch cut.....Cts per lb., 50



## Bolt Headers.

Size, inch.....	$\frac{1}{4}$ to $\frac{3}{4}$	$1\frac{1}{2}$ to 5	$3\frac{1}{4}$ to 1
Each .....	\$2 50	2 50	2 50



## Tongs.

Length, inches.....	18	20	22	24	26	28	30
---------------------	----	----	----	----	----	----	----

Per pair.....\$

## BLACKSMITHS' TOOLS.



Gad Tongs.

Norway Iron, 24 inch..... Per pair, \$1 50

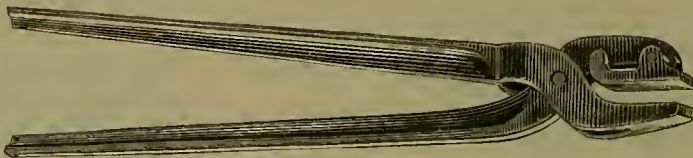


Pick Tongs.

Norway Iron, 24 inch..... Per pair, \$2 00

Pick-up Tongs.

24 inch..... Per pair, \$1 00



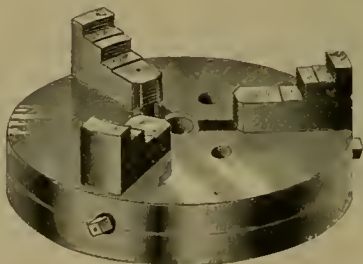
Swivel Jaw Tongs.

For holding irregular and tapered pieces of iron, etc.

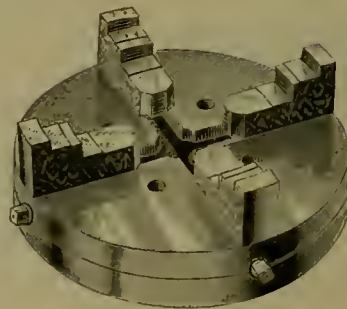
No. 1, 16 inches long..... Per pair, \$1 50

No. 2, 18 " "..... " 1 50

## LATHE CHUCKS.



3 Jaw.



4 Jaw.

Horton's.

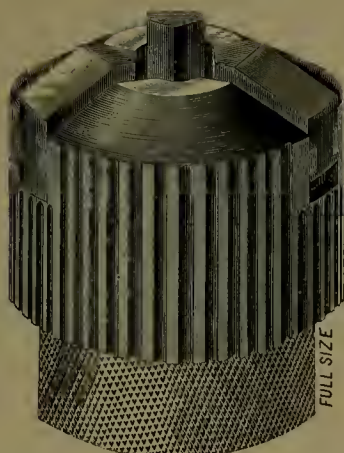
3 Jaw, diameter, inches.....	6	9	12
Each .....	\$26 00	34 00	44 00
4 Jaw, diameter, inches.....	6	9	12
Each .....	\$32 00	42 00	56 00
		64 00	



# DRILL CHUCKS.



Sta.



Cushman's.



Beach.

## Star.

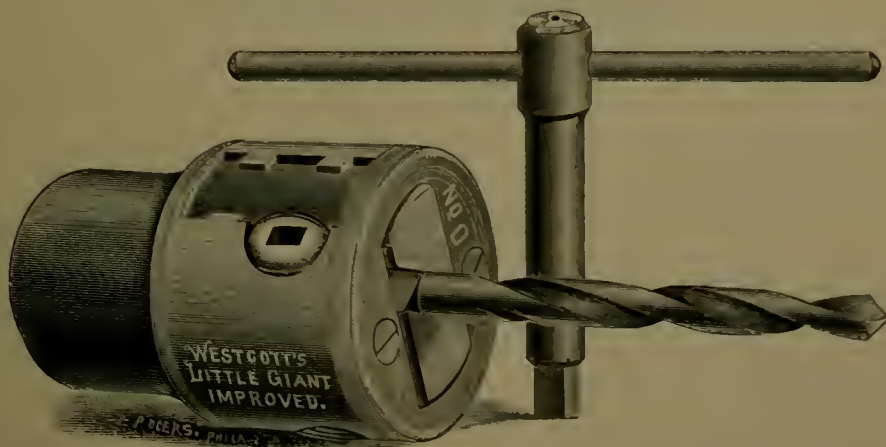
No. 1, Shank  $\frac{1}{2}$  inch diam., 2 inches long, holds drills from 1-64 to  $\frac{1}{8}$  inch diam. . . . . Each, \$1 25  
 No. 2, "  $\frac{5}{8}$  "  $3\frac{1}{2}$  " " " " 1-32 "  $\frac{1}{4}$  " " " " 2 00

## Cushman's.

Holds Drills from No. 0 to 9-16 inch diam. . . . . Each, \$4 00

## Beach.

No. 0, holds Drills from No. 0 to  $\frac{1}{8}$  inch diam. . . . . Each, \$8 00  
 No. 2, " " 0 "  $\frac{3}{8}$  " " " " " 8 50



## Little Giant, Improved.

No. 0, 2 inches diam., holds Drills from No. 0 to  $\frac{3}{8}$  inch diam. . . . . Each, \$8 00

## TWIST DRILLS.



## Straight Shank.

Diam., inches.	Length.	Per Doz.	Each.	Diam., inches.	Length.	Per Doz.	Each.
1-16.....	2 1/2.....	\$1 00.....	\$0 09.....	19-64.....	4 3/8.....	\$3 90.....	\$0 35.....
5-64.....	2 5/8.....	1 10.....	10.....	5-16.....	4 1/2.....	4 20.....	37.....
3-32.....	2 3/4.....	1 20.....	11.....	21-64.....	4 5/8.....	4 50.....	40.....
7-64.....	2 7/8.....	1 30.....	12.....	11-32.....	4 3/4.....	4 80.....	42.....
1/8.....	3.....	1 45.....	13.....	23-64.....	4 7/8.....	5 10.....	45.....
9-64.....	3 1/8.....	1 60.....	15.....	3/8.....	5.....	5 40.....	48.....
5-32.....	3 1/4.....	1 80.....	16.....	25-64.....	5 1/8.....	5 70.....	50.....
11-64.....	3 3/8.....	2 00.....	18.....	13-32.....	5 1/4.....	6 00.....	53.....
3-16.....	3 1/2.....	2 20.....	20.....	27-64.....	5 3/8.....	6 40.....	55.....
13-64.....	3 5/8.....	2 40.....	21.....	7-16.....	5 1/2.....	6 80.....	59.....
7-32.....	3 3/4.....	2 65.....	23.....	29-64.....	5 5/8.....	7 20.....	63.....
15-64.....	3 7/8.....	2 90.....	26.....	15-32.....	5 3/4.....	7 50.....	65.....
1/4.....	4.....	3 15.....	28.....	31-64.....	5 7/8.....	7 75.....	67.....
17-64.....	4 1/8.....	3 40.....	30.....	1/2.....	6.....	8 00.....	70.....
9-32.....	4 1/4.....	3 65.....	32.....				

## Stub's Steel Wire Gauge.

No. by Gauge.	Length.	Per Doz.	Each.	No. by Gauge.	Length.	Per Doz.	Each.
1 to 5.....	4.....	\$2 35.....	\$0 22.....	31 to 35.....	2 5/8.....	\$1 40.....	\$0 14.....
6 " 10.....	3 11-16.....	2 25.....	21.....	36 " 40.....	2 7-16.....	1 25.....	12.....
11 " 15.....	3 1/2.....	2 10.....	20.....	41 " 45.....	2 1/4.....	1 10.....	10.....
16 " 20.....	3 3/4.....	1 95.....	19.....	46 " 50.....	2 1-16.....	95.....	09.....
21 " 25.....	3 1-16.....	1 75.....	17.....	51 " 60.....	1 3/4.....	95.....	09.....
26 " 30.....	2 13-16.....	1 55.....	15.....	61 " 70.....	1 1/2.....	90.....	08.....
Sets, assorted, from Nos. 1 to 60, mounted.....						Per set, \$8 10	



## Straight Shank.

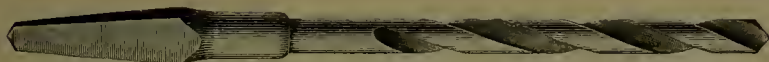
## Fitting Blacksmiths' Drill Presses.

Diam., inches.	Each.	Diam., inches.	Each.	Diam., inches.	Each.
1/8.....	\$0 55.....	17-32.....	\$0 98.....	15-16.....	\$1 60.....
5-32.....	58.....	9-16.....	1 00.....	31-32.....	1 70.....
3-16.....	60.....	19-32.....	1 03.....	1.....	1 80.....
7-32.....	65.....	3/8.....	1 05.....	1 1-32.....	1 90.....
1/4.....	70.....	21-32.....	1 10.....	1 1-16.....	2 00.....
9-32.....	73.....	11-16.....	1 15.....	1 1/8.....	2 20.....
5-16.....	75.....	23-32.....	1 20.....	1 3-16.....	2 30.....
11-32.....	80.....	3/4.....	1 25.....	1 1/4.....	2 40.....
3/8.....	85.....	25-32.....	1 30.....	1 5-16.....	2 65.....
13-32.....	88.....	13-16.....	1 35.....	1 3/8.....	2 80.....
7-16.....	90.....	27-32.....	1 40.....	1 7-16.....	2 95.....
15-32.....	93.....	7/8.....	1 45.....	1 1/2.....	3 10.....
1/2.....	95.....	29-32.....	1 55.....		

The above Drills are 6 inches long, with Shanks 2 1/4 inches long and about 41-64 inches diameter.



# TWIST DRILLS.



## Bit Stock.

For Metal or Wood.

Diameter, inches.	Per Dozen.	Each.	Diameter, inches.	Per Dozen.	Each
1-16.....	\$1 50.....	\$0 14	5-16.....	\$5 40.....	\$0 48
3-32.....	1 65.....	16	11-32.....	6 30.....	54
1-8.....	2 10.....	20	3-8.....	7 20.....	62
5-32.....	2 60.....	24	13-32.....	8 00.....	68
3-16.....	3 10.....	29	7-16.....	8 80.....	75
7-32.....	3 60.....	33	15-32.....	9 60.....	82
1-4.....	4 10.....	38	1-2.....	10 30.....	87
9-32.....	4 70.....	43	17-32.....	11 00.....	92



## Straight and Taper Shank.

Diameter, inches.	Length.	Each.	Diameter, inches.	Length.	Each.
1-4.....	6 1/8.....	\$0 60.....	25-32.....	9 7/8.....	\$2 00
9-32.....	6 1/4.....	65.....	13-16.....	10.....	2 15
5-16.....	6 3/8.....	70.....	27-32.....	10 1/4.....	2 30
11-32.....	6 1/2.....	75.....	7-8.....	10 1/2.....	2 45
3-8.....	6 3/4.....	80.....	29-32.....	10 5/8.....	2 60
13-32.....	7.....	85.....	15-16.....	10 3/4.....	2 75
7-16.....	7 1/4.....	90.....	31-32.....	10 7/8.....	2 90
15-32.....	7 1/2.....	95.....	1.....	11.....	3 00
1-2.....	7 3/4.....	1 00.....	1 1-32.....	11 1/8.....	3 20
17-32.....	8.....	1 10.....	1 1-16.....	11 1/4.....	3 40
9-16.....	8 1/4.....	1 20.....	1 3-32.....	11 1/2.....	3 60
19-32.....	8 1/2.....	1 30.....	1 1-8.....	11 3/4.....	3 80
5-8.....	8 3/4.....	1 40.....	1 5-32.....	11 7/8.....	4 00
21-32.....	9.....	1 50.....	1 3-16.....	12.....	4 20
11-16.....	9 1/4.....	1 60.....	1 7-32.....	12 1.....	4 40
23-32.....	9 1/2.....	1 70.....	1 1-4.....	12 1/2.....	4 50
3-4.....	9 3/4.....	1 85.....			

## STEEL SOCKETS FOR TAPER SHANK DRILLS.



No. 1 holds	$\frac{1}{4}$ to 19-32 in., inclusive.	Each, \$1 20
No. 2	" $\frac{5}{8}$ to 29-32 in., "	" 1 80
No. 3	" 15-16 to 1 $\frac{1}{4}$ in., "	" 2 50
No. 4	" 1 9-32 to 2 in., "	" 4 00
No. 5	" 2 1-16 to 2 $\frac{1}{2}$ in., "	" 7 50

## STOCKS AND DIES.



## Blacksmiths'.

## KING'S.

No. 5 $\frac{1}{2}$ , Cuts 1 $\frac{1}{2}$ to $\frac{3}{4}$ inch, Right Hand, 6, 7, 8 and 9 threads to the inch, 8 Taps and 4 pair of Dies.....	Each, \$35 00
No. 7, cuts 1 $\frac{1}{4}$ to $\frac{5}{8}$ inch, Right Hand, 8 and 10 threads to the inch; cuts 1 $\frac{1}{4}$ to $\frac{7}{8}$ inch, Left Hand, 8 threads to the inch; 6 Taps and 3 pair of Dies.....	" 12 00
No. 9, cuts 1 $\frac{1}{4}$ to $\frac{1}{2}$ inch, Right Hand, 8, 10 and 12 threads to the inch; 6 Taps and 3 pair of Dies.....	" 12 00
No. 17, cuts 1 to $\frac{1}{2}$ inch, Right Hand, 9 and 12 threads to the inch; cuts 1 to $\frac{3}{4}$ inch, Left Hand, 9 threads to the inch; 6 Taps and 3 pair of Dies.....	" 9 00
No. 19, cuts 1 to $\frac{3}{8}$ inch, Right Hand, 9, 12 and 14 threads to the inch; 6 Taps and 3 pair of Dies.....	" 9 00
No. 25, cuts $\frac{3}{4}$ to $\frac{3}{8}$ inch, Right Hand, 10 and 12 threads to the inch; cuts $\frac{3}{4}$ to $\frac{1}{2}$ inch, Left Hand, 10 threads to the inch; 6 Taps and 3 pair of Dies.....	" 6 50
No. 27, cuts $\frac{3}{4}$ to $\frac{3}{8}$ inch, Right Hand, 10, 12 and 16 threads to the inch; 6 Taps and 3 pair of Dies.....	" 6 50
No. 45, cuts $\frac{5}{8}$ to 5-16 inch, Right Hand, 12 and 16 threads to the inch; cuts $\frac{5}{8}$ to 7-16 inch, Left Hand, 12 threads to the inch; 6 Taps and 3 pair of Dies.....	" 5 50
No. 47, cuts $\frac{5}{8}$ to $\frac{1}{4}$ inch, Right Hand, 12, 14 and 18 threads to the inch; 6 Taps and 3 pair of Dies.....	" 5 50
No. 49, cuts $\frac{1}{2}$ to $\frac{1}{4}$ inch, Right Hand, 14 and 18 threads to the inch; cuts $\frac{1}{2}$ to 5-16 inch, Left Hand, 14 threads to the inch; 6 Taps and 3 pair of Dies.....	" 4 50
No. 51, cuts $\frac{1}{2}$ to 3-16 inch, Right Hand, 14, 18 and 22 threads to the inch; 6 Taps and 3 pair of Dies.....	" 4 50

## STOCKS AND DIES.



## Blacksmiths'.

## KING'S.

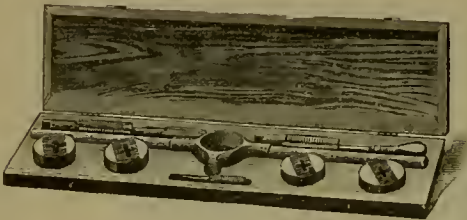
No. 6, cuts $1\frac{1}{2}$ to 1 inch, Right Hand, 8 threads to the inch ; cuts $1\frac{1}{2}$ to 1 inch, Left Hand, 8 threads to the inch ; 4 Taps and 2 sets of Dies .....	Each, \$20 00
No. 11, cuts $1\frac{1}{4}$ to $\frac{5}{8}$ inch, Right Hand, 8 and 10 threads to the inch ; cuts $1\frac{1}{4}$ to $\frac{5}{8}$ inch, Left Hand, 8 threads to the inch ; 4 Taps and 3 sets of Dies .....	" 10 00
No. 15, cuts $1\frac{1}{4}$ to $\frac{1}{2}$ inch, Right Hand, 8, 10 and 12 threads to the inch ; 5 Taps and 3 sets of Dies .....	" 10 00
No. 21, cuts 1 to $\frac{1}{2}$ inch, Right Hand, 9 and 12 threads to the inch ; cuts 1 to $\frac{3}{4}$ inch, Left Hand, 9 threads to the inch ; 4 Taps and 3 sets of Dies .....	" 6 00
No. 23, cuts 1 to $\frac{3}{8}$ inch, Right Hand, 9, 10 and 14 threads to the inch ; 3 Taps and 3 sets of Dies .....	" 5 00
No. 32, cuts $\frac{3}{4}$ to $\frac{3}{8}$ inch, Right Hand, 10 and 14 threads to the inch ; cuts $\frac{3}{4}$ to $\frac{3}{8}$ inch, Left Hand, 10 and 14 threads to the inch ; 4 Taps and 4 sets of Dies .....	" 5 00
No. 34, cuts $\frac{3}{4}$ to 5-16 inch, Right Hand, 10, 12 and 16 threads to the inch ; 3 Taps and 3 sets of Dies .....	" 4 50
No. 34X, cuts $\frac{3}{4}$ to 5-16 inch, Right Hand, 10, 12 and 14 threads to the inch ; 3 Taps and 3 sets of Dies .....	" 4 50
No. 35, cuts $\frac{3}{4}$ to $\frac{3}{8}$ inch, Right Hand, 10 and 14 threads to the inch ; 2 Taps and 2 sets of Dies .....	" 4 00
No. 37, cuts $\frac{5}{8}$ to 3-16 inch, Right Hand, 14, 18 and 22 threads to the inch ; 6 Taps and 3 sets of Dies .....	" 4 25
No. 38, cuts $\frac{5}{8}$ to 5-16 inch, Right Hand, 12 and 18 threads to the inch ; cuts $\frac{5}{8}$ to 7-16 inch, Left Hand, 12 threads to the inch ; 6 Taps and 3 sets of Dies .....	" 4 50
No. 41, cuts $\frac{1}{2}$ to $\frac{1}{8}$ inch, Right Hand, 16, 20 and 26 threads to the inch ; 6 Taps and 3 sets of Dies .....	" 3 25
No. 42, cuts $\frac{1}{2}$ to 3-16 inch, Right Hand, 14 and 20 threads to the inch ; cuts $\frac{1}{2}$ to 5-16, Left Hand, 14 threads to the inch ; 6 Taps and 3 sets of Dies .....	" 3 50
No. 53, cuts 5-16 to 1-16 inch, Right Hand, 16, 20, 24 and 32 threads to the inch ; 4 Taps and 4 sets of Dies .....	" 2 75

MACHINISTS' SCREW PLATES.

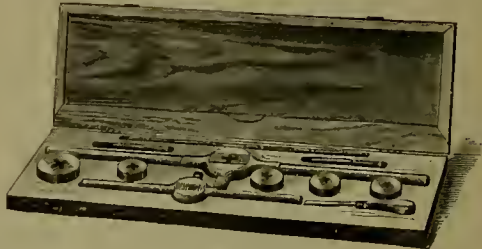


Morse.

Size A cuts $\frac{1}{4}$ , $\frac{3}{8}$ and $\frac{1}{2}$ inch, 20, 16 and 12 threads to the inch.....	Each, \$5 00
Size B " $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{5}{8}$ and $\frac{3}{4}$ inch, 16, 12, 11 and 10 threads to the inch.....	" 8 00
Size C " $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ and $\frac{7}{8}$ inch, 12, 11, 10 and 9 threads to the inch.....	" 10 00
Size D " $\frac{7}{8}$ , 1, $1\frac{1}{8}$ and $1\frac{1}{4}$ inch, 9, 8 and 7 threads to the inch.....	" 13 00



Size B.



Size C.

Little Giant.

Size OO cuts $\frac{1}{8}$ , 5-32, 3-16, 7-32 and $\frac{1}{4}$ inch, with Tap Wrench.....	Each, \$7 70
Size A cuts $\frac{1}{4}$ , 5-16, $\frac{3}{8}$ 7-16, and $\frac{1}{2}$ inch.....	" 14 00
Size B " $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ and 1 inch.....	" 22 00
Size C " $\frac{1}{4}$ , 5-16, $\frac{3}{8}$ , 7-16, $\frac{1}{2}$ , $\frac{5}{8}$ and $\frac{3}{4}$ inch.....	" 24 00
Size D " $\frac{3}{8}$ , 7-16, $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ , $\frac{7}{8}$ and 1 inch.....	" 31 50
Size E " $1\frac{1}{8}$ , $1\frac{1}{4}$ , $1\frac{3}{8}$ and $1\frac{1}{2}$ inch.....	" 50 00

Size C has two stocks, the small one holding Dies cutting the first five sizes, and the large one the two largest sizes, which makes it more convenient than if all the sizes were held in the large stock.

When necessary to cut close under the head, for set-screws and other work, use the face side of the Die.

Dentists'.

HILGERS.

Steel, with Turn Screw, 6 Taps and Dies, 1-16 to $\frac{1}{4}$ inch.....	Each, \$
--	----------

Gunsmiths'.

HILGERS.

Steel, with Turn Screw, 5 Taps and Dies, 1-16 to $\frac{1}{4}$ inch.....	Each, \$
--	----------

Watchmakers'.

STUBS.

NOTCHED.

No. of sizes.....	6	7	8	9	10	12
Each.....\$						

NOT NOTCHED.

No. of sizes.....	6	7	9	10	12
Each.....\$					



# ADJUSTABLE TAP WRENCHES.



## Morse.

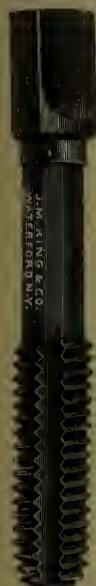
Size A, fitting Taps from $\frac{1}{4}$ to $\frac{5}{8}$ in., inclusive; entire length, 13 in.; fitting Reamers from $\frac{1}{4}$ to 1-16, in., inclusive.	Each, \$3 00
Size B, fitting Taps from $\frac{1}{2}$ to 1 in., incl.; entire length, 18 in.; fitting Reamers from $\frac{3}{8}$ to 1 in., incl.	" 4 00
Size C, fitting Taps from $\frac{7}{8}$ to 1-1/2 in., inclusive; entire length 23 in.; fitting Reamers from 1-16 to 1-11-32 in., inclusive.	" 5 00
Size D, fitting Taps from 1-1/4 to 2 1-16 in., inclusive; entire length, 47-1/2 in.; fitting Reamers from 1-16 to 2 1-16, in., inclusive.	" 15 00

## TAPS.

### Blacksmiths'.

#### PLUG AND TAPER TAPS.

Size, inches.	Hand.	Threads to inch	Each
1-1/2	Right	6, 7 and 8.	\$3 00
1-1/2	Left	6, 7 and 8.	3 00
1-1/4	Right	6, 7, 8 and 9.	1 75
1-1/4	Left	8 and 9.	1 75
1	Right	7, 8, 9 and 10.	1 25
1	Left	8 and 9.	1 25
3/8	Right	8, 9 and 10.	90
3/8	Left	9.	90
3/4	Right	7, 8, 9, 10, 12 and 14.	65
3/4	Left	10 and 12.	65
5/8	Right	10, 11, 12, 14 and 16.	50
5/8	Left	10 and 12.	50
9-16	Right	10, 12, 14 and 16.	50
9-16	Left	12.	50
1/2	Right	10, 12, 14, 16 and 18.	40
1/2	Left	12 and 14.	40
7-16	Right	10, 12, 14, 16 and 18.	40
7-16	Left	14.	40
3/8	Right	12, 14, 16, 18 and 20.	35
5-16	Right	14, 16, 18, 20 and 22.	30
1/4	Right	16, 18, 20, 22, 24 and 26.	30
3-16	Right	24, 26 and 28.	30
1/8	Right	30 and 32.	30



Plug.



Taper.

## Machinist's Hand.

#### TAPER, PLUG AND BOTTOMING.



Taper.



Plug.



Bottoming.

Size, in.,	1/4	5/16	3/8	7/16	1/2
Threads to in.	18, 20	16, 18	14, 16	14	12, 13
Each	\$0 45	\$0 50	\$0 55	\$0 60	\$0 70
Size, in.	9-16	5/8	11-16	3/4	13-16
Threads to in.	11, 12	10, 11	11	10	10
Each	\$0 80	\$0 90	\$1 05	\$1 20	\$1 40
Size, in.	7/8	15-16	1	1 1/8	1 1/4
Threads to in.	9	9	8	7, 8	7
Each	\$1 60	\$1 80	\$2 00	\$2 25	\$2 60
Size, in.	1 3/8	1 1/2			
Threads to in.	6	6			
Each	\$3 00	\$3 50			

## TAPS.



## Machinists' Nut.

Size, inches.....	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	11-16
Threads to inch.	18 and 20	16 and 18	14 and 16	14	12 and 13	11 and 12	10 and 11	11
Each.....	\$0 60	70	80	90	1 00	1 15	1 30	1 45
Size, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	
Threads to the inch.....	10	9	8	7 and 8	7	6	6	
Each.....	\$1 60	2 10	2 80	3 20	3 70	4 20	4 70	

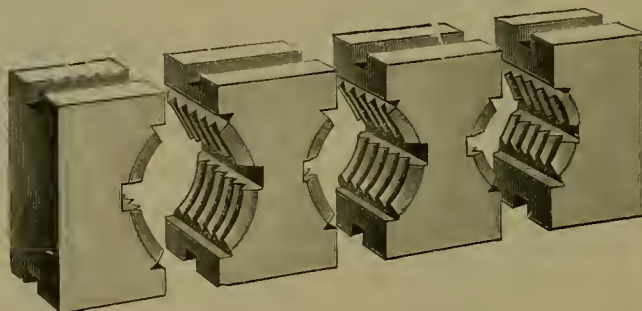
## TAPER REAMERS.



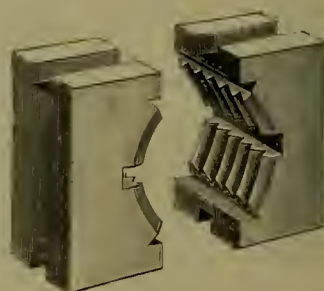
For Bit Brace.

Size, inches.....	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	11-16	$\frac{3}{4}$
Per dozen.....	\$2 40	3 00	3 60	4 20	4 80	6 00	7 20	8 40	9 60

## DIES.



Complete Set of Dies.



Pair of Dies.

## Blacksmiths'.

## KING'S.

	Per Pair.	Per Set.
For No. 5 $\frac{1}{2}$ Stock.....	\$2 00	\$8 00
For " 6 " (in Sets only).....		6 00
For " 7 or 9 " .....	1 20	3 50
For " 11 or 15 Stock (in Sets only).....		3 00
For " 17 or 19 " .....	85	2 50
For " 21 or 23 " (in Sets only).....		2 00
For " 25 or 27 " .....	75	2 25
For " 32 Stock (in Sets only).....		2 25
For " 34 or 34X Stock (in Sets only).....		2 00
For " 35, 37, 38, 41 or 42 Stock (in Sets only).....		1 50
For " 45 or 47 Stock.....	75	2 25
For " 49 or 51 " .....	70	2 00
For " 53 Stock (in Sets only).....		1 50



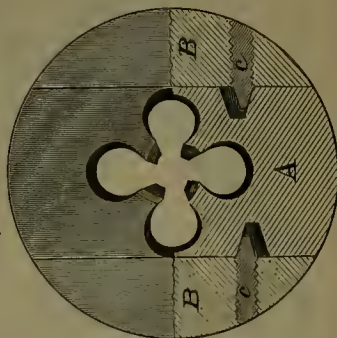
## DIES

### For Little Giant Screw Plate.



Die in Collet.

A represents the Die, which is in two pieces, each piece is held in place and adjusted by the screws, CC. B represents the Collet. It will be seen that the holes for the screws in the Collet (B) are opposite, but the holes in the Die are NOT opposite and are larger than the point of the screw, so that one screw holds the Die from moving forward and the other from moving backward, both screws impinge on the lower side of the holes, so that when both screws are tight they prevent the Die from moving. In this way we make use of the screw and wedge; it is doubtful if there can be a more simple and secure way of holding and adjusting Dies. To adjust the Die, loosen one screw and tighten the other, according to the direction it is desired to move it.



Sectional View of Die and Collet.

Size, inches.....	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	
Threads to inch.....	18 and 20	16 and 18	14 and 16	14	12 and 13	11 and 12	10 and 11	
Each.....	\$1 00	1 00	1 00	1 50	1 50	2 00	2 00	
Size, inches.....	11-16	$\frac{3}{4}$	$\frac{7}{8}$	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{3}{8}$	1 $\frac{1}{2}$
Threads to inch.....	11	10	9	8	7 and 8	7	6	6
Each.....	\$2 00	2 00	3 00	3 00	4 50	4 50	6 00	6 00

### For Morse Screw Plates.

Size .....	A	B	C	D
Each.....	\$1 00	1 25	1 75	2 00

### Machine.



Die in Collet.

Diameter, inches.....	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	11-16
Threads to inch.....	18 and 20	16 and 18	14 and 16	14	12 and 13	11 and 12	10 and 11	11
Dies each, without Collets....	\$1 00	1 00	1 00	1 50	1 50	2 00	2 00	2 00
Size, inches.....	$\frac{3}{4}$	13-16	$\frac{7}{8}$	15-16	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{3}{8}$
Threads to inch.....	10	10	9	9	8	7 and 8	7	6
Dies each, without Collets....	\$2 00	3 00	3 00	3 00	3 00	4 50	4 50	6 00



Bit Brace, Collet and Die.



Collet Holder.

### Bit Brace, Collet and Die.

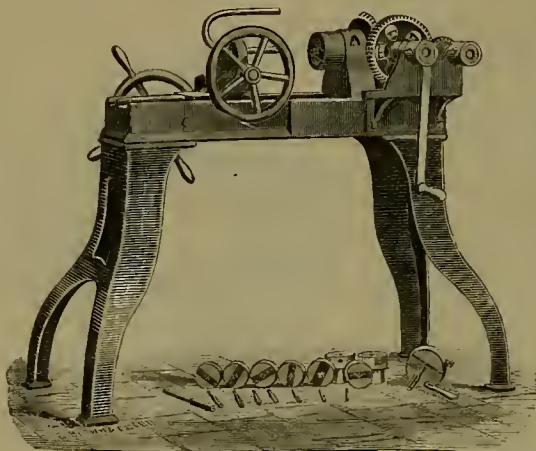
Size, inches .....	3-16	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$
Each .....	\$1 90	1 90	1 95	2 00	2 60	2 70

### Collet Holder.

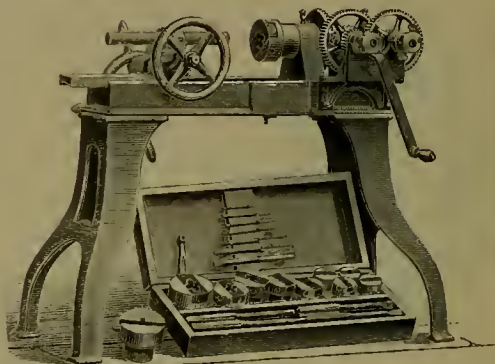
For Bit Brace Use.

Holds all sizes in A, and five smallest sizes in C Plates. .... Each, \$1 50

## HAND BOLT CUTTER AND NUT TAPPER.



No. 8.



No. 9.

No. 8 has three changes of speed multiplying the power two and seven times, and equalizing it once.  
 Price, including Tap Chuck, Taps, Dies and Collets for  $\frac{1}{4}$ , 5-16,  $\frac{3}{8}$ , 7-16,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$  and 1 inch... \$120 00  
 Balance wheel on Spindle, extra..... 5 00

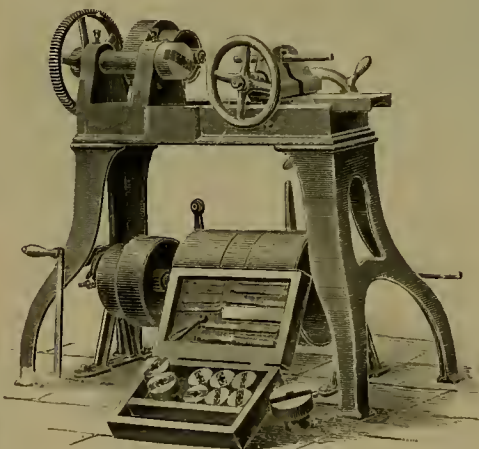
Weight, about 350 lbs.

Case for Taps, Dies, etc., furnished with this machine, same as shown in cut of No. 9.

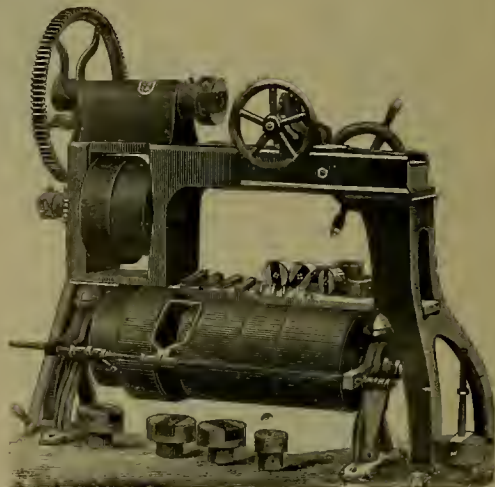
No. 9 has four changes of speed, multiplying the power 14, 7 and 2 times, and equalizing it once.  
 Price, including Tap Chuck, Taps, Dies and Collets for  $\frac{3}{8}$ , 7-16,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$ , 1, 1  $\frac{1}{8}$ , 1  $\frac{1}{4}$ , 1  $\frac{3}{8}$  and 1  $\frac{1}{2}$ , \$180 00  
 Balance wheel on Spindle, extra..... 5 00

Weight, about 400 lbs.

## POWER BOLT CUTTER AND NUT TAPPER.



No. 10.



No. 12.

No. 10. Price, including Counter-shaft, Tap Chuck, Taps, Dies and Collets for  $\frac{1}{4}$ , 5-16,  $\frac{3}{8}$ , 7-16,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$  and 1 inch..... \$140 00  
 With Friction Clutches on Counter-shaft, extra..... 10 00

Weight, about 600 lbs.

No. 12. Price, including Counter-shaft, Tap Chuck, Taps, Dies and Collets for  $\frac{3}{8}$ , 7-16,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$ , 1, 1  $\frac{1}{8}$ , 1  $\frac{1}{4}$ , 1  $\frac{3}{8}$  and 1  $\frac{1}{2}$ ..... 200 00

Weight, about 750 lbs.

Cases for Taps, Dies, etc., furnished with this machine, same as shown in cut of No. 10.

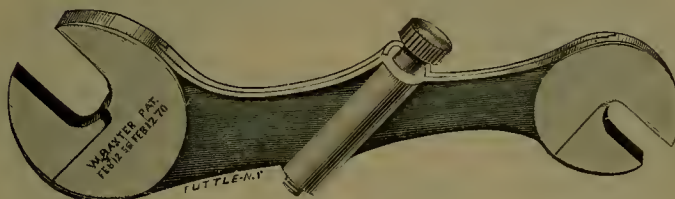
# WRENCHES.

BAXTER'S.



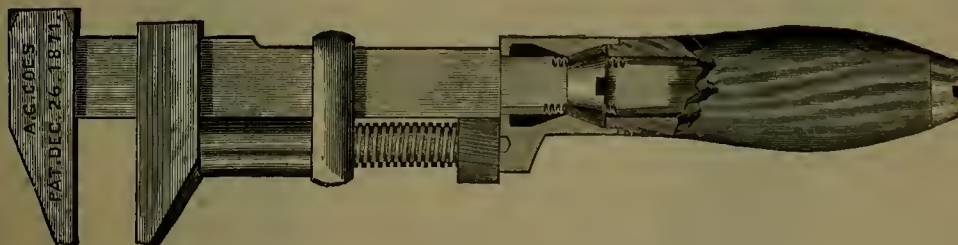
"S."

4 inch.....	Per doz., \$6 00	8 inch.....	Per doz., \$12 00	12 inch.....	Per doz., \$24 00
6 inch.....	" 9 00	10 inch.....	" 18 00		



Diagonal.

6 inch.....	Per doz., \$9 00	8 inch.....	Per doz., \$12 00	10 inch.....	Per doz., \$18 00
-------------	------------------	-------------	-------------------	--------------	-------------------



Coes'.

Black.

6 inch.....	Per doz., \$ 9 00
8 inch.....	" 10 00
10 inch.....	" 12 00
12 inch.....	" 14 00
15 inch.....	" 24 00
18 inch.....	" 30 00
21 inch.....	" 36 00

Bright.

6 inch.....	Per doz., \$10 00
8 inch.....	" 11 00
10 inch.....	" 14 00
12 inch.....	" 16 00
15 inch.....	" 26 00
18 inch.....	" 32 00
21 inch.....	" 38 00

Agricultural.

P. S. & W.

Black.

Length, inches.....	8	10	12
Per doz.....	\$10 00	12 00	14 00

TABLE SHOWING THE SIZE NUT WRENCH WILL TAKE.

Size Wrench, inches....	6	8	10	12	15	18	21
Size Nut, inches.....	7/8	1 1/4	1 3/4	2 1/4	2 5/8	3	4 1/8



## HORSE SHOES.

PERKIN'S or BURDEN'S.

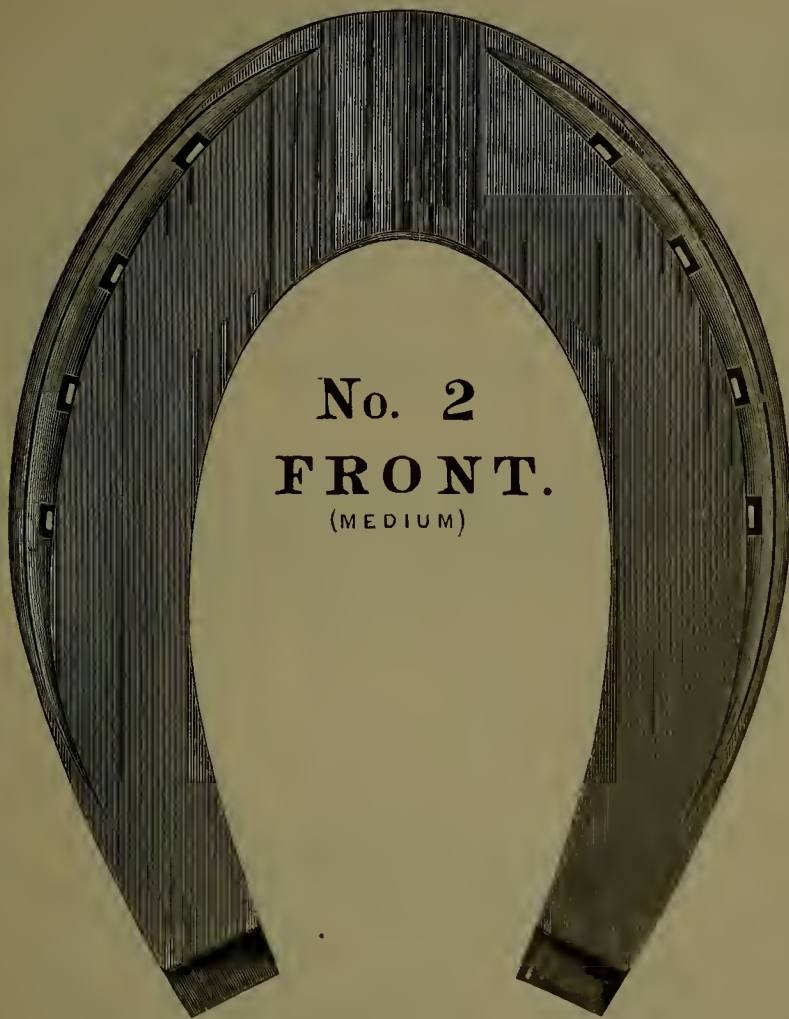


Nos .....	1	2	3	4	5	6
Length, inches.....	5 $\frac{1}{2}$	6	6 $\frac{1}{2}$	6 $\frac{7}{8}$	7 $\frac{1}{4}$	7 $\frac{5}{8}$
Width, inches.....	4 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{1}{8}$	5 $\frac{3}{8}$	5 $\frac{3}{4}$	6
Weight, Front, ounce.....	15	17	21	24	29	35
Weight, Hind, ounce.....	12	15	18	22	26	31

Per keg, \$.....

# HORSE SHOES.

PERKIN'S or BURDEN'S



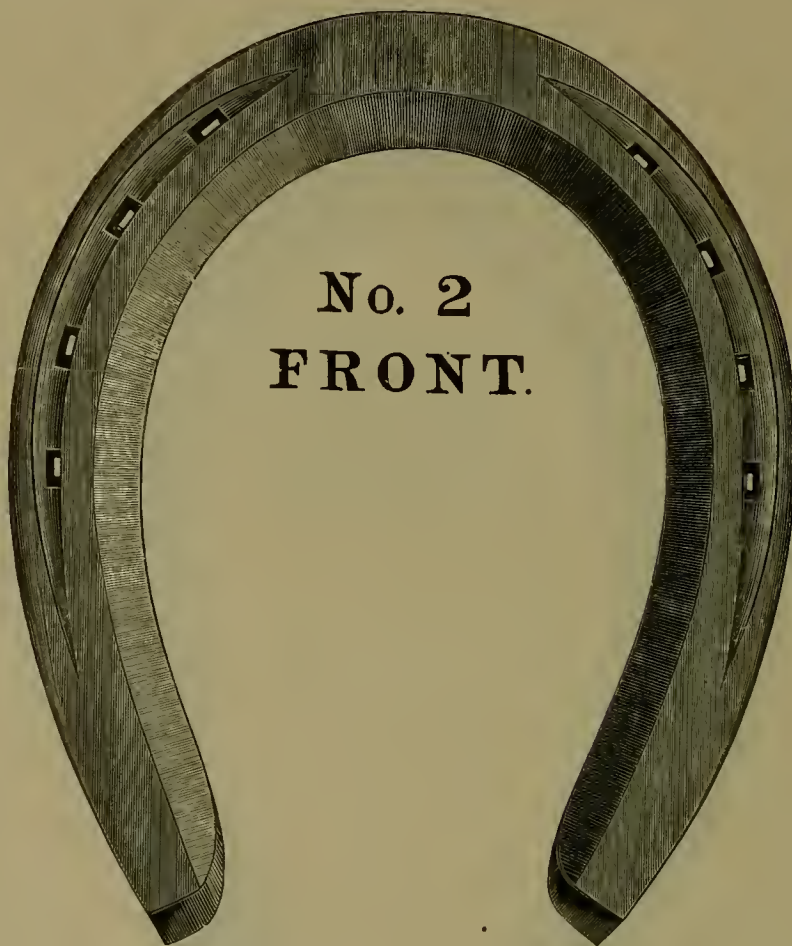
Nos. . . . .	0	1	2	3	4	5	6	7	8
Length, inches. . . . .	5	5 <sup>1</sup> / <sub>2</sub>	6	6 <sup>1</sup> / <sub>2</sub>	6 <sup>7</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>8</sub>	8	8 <sup>1</sup> / <sub>2</sub>
Width, inches. . . . .	4 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	6	6 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>
Weight, Front, ounce. . . . .	13	17	20	24	28	34	38	49	54
Weight, Hind, ounce. . . . .	10	14	16	20	24	28	33	38	43

Per keg, \$ . . . . .



## HORSE SHOES.

PERKIN'S or BURDEN'S.



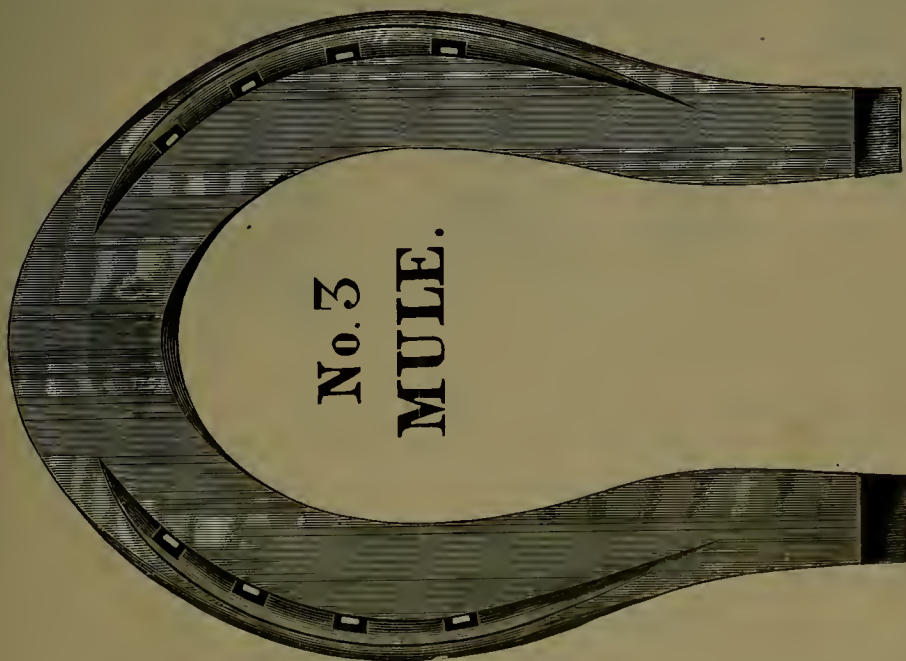
Road, Trotting, or Snow.

Nos.....	0	1	2	3	4	5	6
Length, inches.....	4 $\frac{3}{4}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	6	6 $\frac{1}{2}$	6 $\frac{7}{8}$	7 $\frac{1}{8}$
Width, inches.....	4 $\frac{1}{8}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{1}{8}$	5 $\frac{3}{8}$	5 $\frac{3}{4}$	6
Weight, Front, ounces.....	9	13	16	19	22	25	28
Weight, Hind, ounces.....	8	10	12	16	19	22	25

Per keg, \$.....

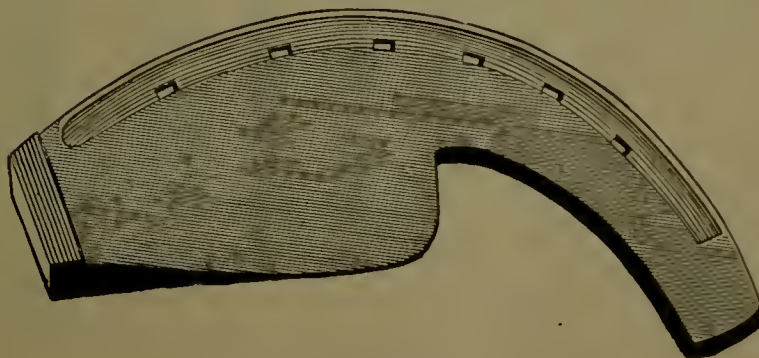
# SHOES.

PERKIN'S or BURDEN'S.



Nos . . . . .	1	2	3	4	5	6	7
Length, inches . . . . .	5	5 <sup>3</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	6	6 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>8</sub>
Width, inches . . . . .	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	4	4 <sup>1</sup> / <sub>4</sub>	4 <sup>5</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>8</sub>
Weight, ounces . . . . .	10	12	15	18	22	25	29

Per keg, \$ . . . . .



## OX.

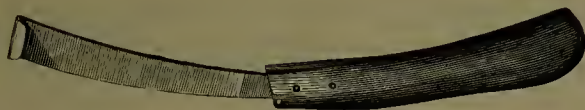
Nos . . . . .	1	2	3	4	5
Length, inches . . . . .	4 <sup>1</sup> / <sub>2</sub>	5	5 <sup>1</sup> / <sub>2</sub>	6	6 <sup>1</sup> / <sub>2</sub>

50 and 100 lbs. in a box, half each rights and lefts.

Cts. per lb . . . . .



## FARRIER'S TOOLS.



### Knives.

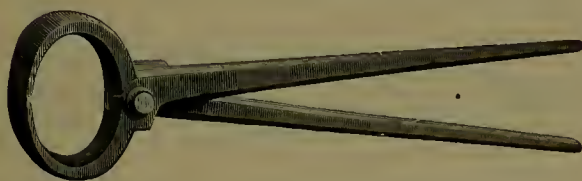
IXL, width of blade,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$  and  $\frac{7}{8}$  inches..... Per dozen, \$



### Pincers.

Wrought Iron, Steel Face.

Length, inches.....	10	12	14
Per dozen.....	\$		



### Hoof Nippers.

California Pattern, Solid Cast Steel.

Length 14 inches..... Per dozen, \$

## WELDING MATERIAL.

### Borax.

Refined ..... Cts. per lb.

### Pure Silicon Flux (Sand).

10 lbs. in a sack..... Cts. per lb.

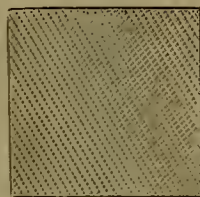
### Cherry Heat Welding Compound.

For Steel.

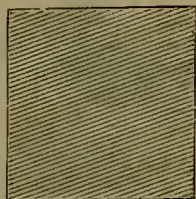
25 lbs. in a box..... Cts. per lb.



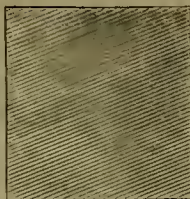
## FILES AND RASPS.



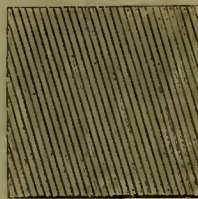
Bastard.



Second Cut.



Smooth.



Mill Saw, Bastard.



Horse Rasp.

## Best American.

## BASTARD.

Length, inches	4	5	6	7	8	9	10	12	14	16	18
Round, Square and Mill Saw	\$1.40	1.60	1.85	2.20	2.65	3.15	3.80	5.35	7.65	10.80	14.70
Mill Saw, one round edge	1.51	1.72	1.99	2.37	2.85	3.39	4.09	5.75	8.22	11.61	15.80
Flat and Warding	1.50	1.70	2.00	2.40	2.90	3.50	4.15	5.80	8.15	11.55	16.00
Half R'd, Hand and Knife	1.60	1.85	2.20	2.65	3.15	3.80	4.50	6.25	8.75	12.25	17.25

## SECOND CUT.

Length, inches	4	5	6	7	8	9	10	12	14	16	18
Round, Square and Mill Saw	\$1.65	1.85	2.10	2.55	3.05	3.65	4.35	6.15	8.75	12.40	16.90
Flat	1.75	2.00	2.35	2.80	3.35	4.00	4.75	6.65	9.40	13.30	18.45
Half Round and Hand	1.85	2.10	2.55	3.05	3.65	4.35	5.20	7.20	10.10	14.10	19.90

## SMOOTH.

Length, inches	4	5	6	7	8	9	10	12	14	16	18
Round and Square	\$1.75	2.00	2.35	2.80	3.30	3.95	4.75	6.70	9.55	13.50	18.40
Flat and Warding	1.90	2.15	2.55	3.05	3.65	4.35	5.20	7.25	10.20	14.45	20.00
Half Round and Hand	2.00	2.35	2.80	3.30	3.95	4.75	5.60	7.80	10.95	15.35	21.60

## RASPS.

Length, inches	8	9	10	12	13	14	15	16	18
Cabinet Files and Rasps	\$4.20	5.00	6.00	8.25	9.65	11.30	13.15	15.40	.....
Half Round Wood Rasps	3.65	4.35	5.20	7.20	8.50	10.10	11.90	14.10	.....
Flat Wood Rasps	3.35	4.00	4.75	6.65	7.90	9.40	11.20	13.30	.....
Farriers' or Horse Rasps	.....	.....	4.65	6.30	7.55	9.00	10.80	12.80	17.60
Tanged Horse Rasps	.....	.....	6.30	9.00	10.80	12.80	15.00	17.60	.....
Shoemakers' Rasps	2.90	3.50	4.10	5.80	.....	.....	.....	.....	.....

## SAW FILES

Length, inches	2 to 3	3½	4	4½	5	5½	6	7	8	9	10	11	12
Tapers, Reg'r Single Cut	\$1.05	1.05	1.20	1.35	1.60	1.85	2.15	2.75	3.45	4.30	5.35	6.60	8.00
Tapers, Slim, Single Cut	1.15	1.15	1.25	1.40	1.55	1.75	2.05	2.45	3.00	3.65	4.50	5.55	6.85
Tapers, Dble Cut to Point	1.35	1.35	1.50	1.75	2.00	2.35	2.75	3.45	4.30	5.40	6.70	8.25	10.00
Tapers, Double ended	.....	.....	.....	.....	.....	.....	.....	2.10	2.40	2.70	3.20	.....	.....
Pit-Saw, Single Cut	1.50	1.50	1.60	1.70	1.85	2.10	2.45	3.15	3.95	4.80	5.80	6.85	8.00
Band-Saw, Single Cut	1.70	1.70	1.85	2.05	2.35	2.65	3.00	3.70	4.50	.....	.....	.....	.....
Hook Tooth' Single Cut	.....	.....	.....	.....	.....	.....	2.65	3.15	3.80	4.50	5.25	6.15	7.10

## Peter Stub's.

## SECOND CUT.

Length, inches	2 to 3	3½	4	4½	5	6
Warding	\$1.75	1.75	2.00	2.38	2.50	3.50
Knife	1.50	1.75	2.25	2.50	3.00	3.50
Taper, Saw	1.70	1.80	2.00	2.80	3.10	3.50



# AXLE CLIPS.



5-8 in. Wide, Shank 1-4 in. diameter.

Nos.	00	0	1	2	3	4
Length Flat Part, inches	1½	2	2½	3	3½	4
Per dozen	\$0 80	80	80	80	80	92



5-8, 3-4 and 7-8 in. Wide, Shank 5-16 in. diameter.

Nos.	00	0	1	2	3	4	5	6
Length Flat Part, inches	2¼	2¾	3¼	3¾	4¼	4¾	5¼	6
Per dozen	\$0 80	80	80	80	85	1 00	1 15	1 35



1 1-4 in. Wide, Shank 3-8 in. diameter

Nos.	00	0	1	2	3	4	5	6
Length Flat Part, inches	3½	4	4½	5	5½	6	6½	7¼
Per dozen	\$1 00	1 00	1 00	1 15	1 25	1 40	1 75	2 25



Shank 7-16 in. diameter and 1 1-2 in. Long.

Nos.	0	1	2	3	4	5
Length Flat Part, inches	5	6	7	8	9	10
Width Flat Part, inches	1½	1½	1¾	1¾	1¾	1¾
Per dozen	\$2 00	2 25	2 50	2 90	3 25	3 75

All of the above Clips made of Norway Iron.

## AXLE CLIPS.



## No. 76 Pattern.

7-8 inch Wide, Shank 5-16 inch diameter.

Nos.....	00	0	1	2	3	4	5	6
Length Flat Part, inches.....	2¼	2¾	3¼	3¾	4¼	4¾	5¼	6
Per dozen.....	\$c 80	80	80	80	85	1 00	1 15	1 35



## No. 76 Pattern.

1 1-4 inch Wide, Shank 3-8 inch diameter.

Nos.....	00	0	1	2	3	4	5	6
Length Flat Part, inches.....	3½	4	4½	5	5½	6	6½	7¼
Per dozen.....	\$1 00	1 00	1 00	1 15	1 25	1 40	1 75	2 25



## Superior Pattern.

7-8 inch Wide, Shank 5-16 inch diameter.

Nos.....	0	1	2	3	4	5
Length Flat Part, inches.....	2¾	3¼	3¾	4¼	4¾	5¼
Per dozen.....	\$0 70	70	70	78	97	1 10



## Superior Pattern.

1 1-4 inch Wide, Shank 3-8 inch diameter.

Nos.....	00	0	1	2	3	4	5	6	7
Length Flat Part, inches.....	3½	4	4½	5	5½	6	6½	7¼	8
Per dozen.....	\$1 00	1 00	1 00	1 15	1 25	1 40	1 75	2 25	2 35

All of the above Clips made of Norway Iron.

## AXLE CLIPS.



Flat, Sharp Center.



O. G., Sharp Center, Ribbed.



O. G., Sharp Center, Plain.

### Flat, Sharp Center.

7-8 inch Wide, Shank 5-16 inch diameter.

Nos.....	0	1	2	3	4	5
Length Flat Part, inches.....	2 3/4	3 3/4	3 3/4	4 1/4	4 3/4	5 1/4
Per dozen.....	\$0 85	85	85	90	1 05	1 20

### O. G., Sharp Center, Ribbed.

3-4 inch Wide, Shank 1-4 inch diameter.

Nos.....	00	0	1	2
Length Flat Part, inches.....	1 1/2	2	2 1/2	3
Per dozen.....	\$1 00	1 00	1 00	1 00

### O. G., Sharp Center, Plain.

1 inch Wide, Shank 5-16 inch diameter.

Nos.....	00	0	1	2	3	4	5
Length Flat Part, inches.....	2 1/4	2 3/4	3 1/4	3 3/4	4 1/4	4 3/4	5 1/4
Per dozen.....	\$1 00	1 00	1 00	1 05	1 10	1 20	1 30

## SHORT SPRING CLIPS.



Cut G.



Cut H.

### Cut G.

No. 1, for 3 leaf, 1 1/4 inch Spring, Flat Part 3/4 inch, Shank 5-16 inch diameter.....	Per dozen, \$1 75
No. 2, " 4 " 1 1/4 " " 3/4 " " 5-16 " .....	" 1 75

### Cut H.

No. 2, for 3 leaf, 1 1/4 inch Spring, Flat Part 3/4 inch, Shank 5-16 inch diameter .....	Per dozen, \$1 75
No. 3, " 4 " 1 1/4 " " 1 " " 5-16 " .....	" 1 75
No. 4, " 3 " 1 1/2 " " 3/4 " " " .....	" 2 00
No. 5, " 4 " 1 1/2 " " 7/8 " " " .....	" 2 00
No. 6, " 5 " 1 1/2 " " 1 1/4 " " " .....	" 2 00
No. 7, " 3 " 1 3/8 " " 3/4 " " " .....	" 2 00
No. 8, " 4 " 1 3/8 " " 1 " " " .....	" 2 00

All the above Clips made of Norway Iron.

## SADDLE CLIPS.



E. &amp; M.'s.



Seward's.

## E. and M.'s.

For 1 1-4 inch Springs.

No. 0, Flat Part 2 inches long.....	Per dozen, \$6 00
No. 2, " 2 $\frac{3}{4}$ " .....	" 6 00

## Seward's.

For 1 1-4 inch Springs.

Nos .....	00	0	1	2	3
Length Flat Part, inches.....	2	2 $\frac{3}{8}$	2 $\frac{3}{4}$	3 $\frac{1}{8}$	3 $\frac{1}{2}$
Per dozen sets.....	\$4 00	4 25	4 50	5 00	5 50

For 1 3-8 and 1 1-2 inch Springs.

Nos .....	0	1	2	3
Length Flat Part, inches.....	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Per dozen sets.....	\$4 50	5 00	5 50	6 00



## Brewster's.

For 1 1-4 inch Springs.

Nos .....	000 $\frac{1}{2}$	00	00 $\frac{1}{2}$	0	0 $\frac{1}{2}$	1	2	3
Length Flat Part, inches..	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3 $\frac{1}{8}$	3 $\frac{1}{2}$
Per dozen.....	\$6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00

For 1 3-8 inch Springs.

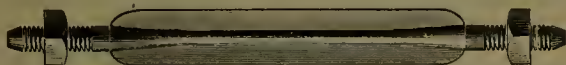
Nos.....	0	1	2	3
Length Flat Part, inches.....	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Per dozen.....	\$6 00	6 00	6 00	6 00

For 1 1-2 inch Springs.

Nos .....	0	1	2	3
Length Flat Part, inches.....	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Per dozen.....	\$6 00	6 00	6 00	6 00

All of the above Clips made of Norway Iron.

## SPRING BAR CLIPS.



### Ribbed.

5-8 inch Wide, Shank 5-16 inch diameter.

Nos. ....	0	1	2	3	4	5	6
Length Flat Part, inches.....	4 $\frac{1}{4}$	4 $\frac{3}{4}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{3}{8}$	7	7 $\frac{3}{4}$
Per dozen.....	\$1 00	1 15	1 22	1 30	1 45	1 65	1 85



Cut A.



Cut B.

### Cut A, Sharp Center Ribbed.

5-8 inch Wide, Shank 5-16 inch diameter.

Nos.....	0	1	2	3	4	5
Length Flat Part, inches.....	4 $\frac{1}{4}$	4 $\frac{3}{4}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{3}{8}$	7
Per dozen.....	\$1 05	1 20	1 27	1 35	1 50	1 70

### Cut B, Sharp Center.

9-16 inch Wide, Shank 5-16 inch Diameter.

Nos.....	0	1	2	3	4
Length Flat Part, inches.....	4 $\frac{1}{4}$	4 $\frac{3}{4}$	5 $\frac{3}{8}$	6 $\frac{1}{8}$	6 $\frac{7}{8}$
Per dozen.....	\$1 20	1 30	1 45	1 60	1 80

## CLIP YOKES.



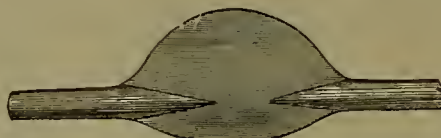
### Wrought Iron, Drilled.

For  $\frac{1}{4}$  inch Clips,  $\frac{3}{4}$ ,  $\frac{7}{8}$  and 1 inch between holes..... Per dozen, \$  
 For 5-16 inch Clips,  $\frac{3}{4}$ ,  $\frac{7}{8}$ , 1, 1 $\frac{1}{8}$ , 1 $\frac{1}{4}$ , 1 $\frac{3}{8}$  and 1 $\frac{1}{2}$  inch between holes..... Cts. per lb.  
 For 3-8 inch Clips, 1, 1 $\frac{1}{8}$ , 1 $\frac{1}{4}$ , 1 $\frac{3}{8}$ , 1 $\frac{1}{2}$ , 1 $\frac{5}{8}$ , 1 $\frac{3}{4}$  and 2 inch between holes..... "

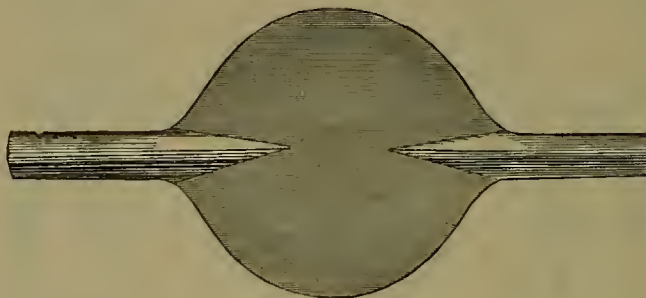
All of the above made of Norway Iron.



## SINGLETREE CLIPS.



End.

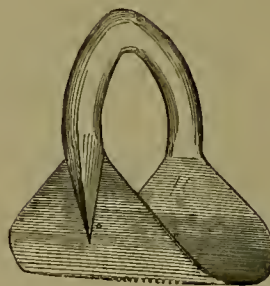


Center.

	Center.	Center.	Center.	Center or End.	Center or End.	End.	End.
For Nos. ....	00	0	1	2	3	4	6
Diameter Shank, inch. . .	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{5}{8}$	9-16	$\frac{1}{2}$	7-16	$\frac{3}{8}$
Total Length, inches . . .	13	12	11	10	$8\frac{1}{2}$	$7\frac{1}{2}$	7
Per dozen . . . . . \$							



End, Welded.



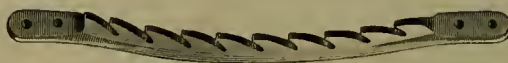
Center, Welded.

We carry in stock all the above Clips, Welded, ready for use.

Have also Nos. 3, 4 and 6 Welded with Hook for Ends; Nos. 1 and 2 Welded with Ring for Centers, No. 1 with  $\frac{1}{2}$  inch, No. 2 with 7-16 inch ring.

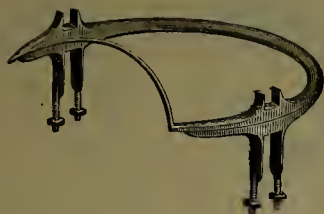
## BRAKE RATCHETS.

Wrought Iron.



Without Guard. . . . . Each, \$

## FIFTH WHEELS.



Derby.



Larkin's.

### Derby No. 2.

$\frac{5}{8}$  inch iron, 12, 13 and 14 inches diameter, for  $\frac{7}{8}$  to  $1\frac{1}{4}$  inch axles. . . . . Per dozen, \$  
 $\frac{3}{4}$  " 12, 13 and 14 " 1 to  $1\frac{1}{4}$  " . . . . . "

### Larkin's No. 6.

With Derby No. 2 Top Wheel and Anti-Rattler.

$\frac{5}{8}$  inch iron, 14, 15 and 16 inches diameter, for 1 to  $1\frac{1}{4}$  inch axles. . . . . Per dozen, \$  
 $\frac{3}{4}$  " 14, 15 and 16 " 1 to  $1\frac{1}{4}$  " . . . . . "



No. 11.



No. 12.

### Brewster's.

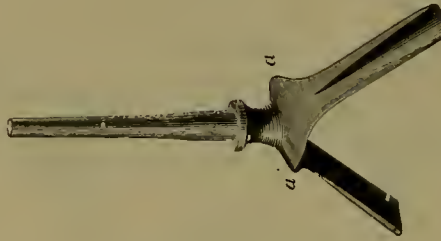
No. 11,  $\frac{5}{8}$  inch iron, 12 and 14 inches diameter, for  $\frac{7}{8}$  to  $1\frac{1}{8}$  inch axles. . . . . Per dozen, \$  
 No. 11,  $\frac{3}{4}$  " 12 and 14 "  $\frac{7}{8}$  to  $1\frac{1}{8}$  " . . . . . "  
 No. 12,  $\frac{5}{8}$  " 12 and 14 "  $\frac{7}{8}$  to  $1\frac{1}{8}$  " . . . . . "  
 No. 12,  $\frac{3}{4}$  " 12 and 14 "  $\frac{7}{8}$  to  $1\frac{1}{8}$  " . . . . . "

## FIFTH WHEEL---ANTI-RATTLER.



For Fifth Wheels,  $\frac{5}{8}$  inch iron. . . . . Per dozen, \$  
 For " "  $\frac{3}{4}$  " . . . . . "

## CLIP KING BOLTS.



No. 1, $\frac{1}{2}$ inch diameter at collar .....	Per dozen, \$
No. 2, 9-16 " " " .....	"
No. 3, $\frac{5}{8}$ " " " .....	"
No. 4, $\frac{3}{4}$ " " " .....	"

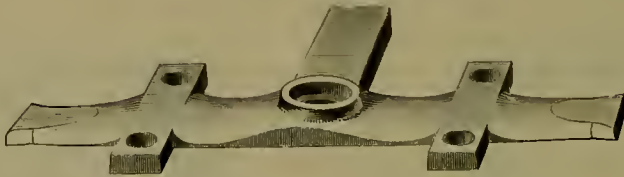


## KING BOLT TIES.

With Single Brace End.

For  $\frac{7}{8}$ , 1,  $1\frac{1}{8}$ ,  $1\frac{1}{4}$ ,  $1\frac{3}{8}$  and  $1\frac{1}{2}$  inch axles..... Per dozen, \$

## PERCH PLATES.



For Single Reach.

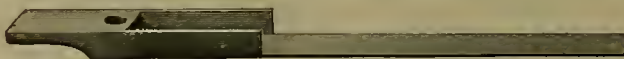
No. 2, for $1\frac{1}{4}$ inch Spring and No. 2 King Bolt.....	Per dozen, \$
No. 3, for $1\frac{3}{8}$ " " " 2 " .....	"
No. 4, for $1\frac{1}{2}$ " " " 3 " .....	"



For Double Reach.

No. 6, for $1\frac{1}{4}$ inch Spring and No. 2 King Bolt.....	Per dozen, \$
No. 7, for $1\frac{3}{8}$ " " " 2 " .....	"
No. 8, for $1\frac{1}{2}$ " " " 3 " .....	"

## REACH SOCKETS.



Mosier's.

No. 1, for $\frac{3}{4}$ inch Reach.....	Per dozen, \$
No. 2, for $\frac{7}{8}$ " .....	"

All the above made of Norway Iron.

# STAY ENDS AND OFFSETS.



Stay End.

Plain Octagon Pattern.

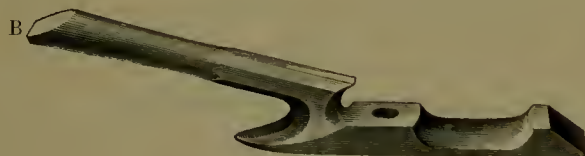
No. 0, Round Part B 7-16 inch diameter.....	Per dozen, \$
No. 1, " " 1/2 " .....	"
No. 2, " " 9-16 " .....	"



Offset.

Plain Octagon Pattern.

No. 0, Arm B, 7-16 inch diameter; Arms A, A, 3/8 inch diameter.....	Per dozen, \$
No. 1, " 1/2 " " " 7-16 " .....	"
No. 2, " 9-16 " " " 1/2 " .....	"



Stay End.

Point Octagon Pattern.

No. 0, Round Part B 7-16 inch diameter.....	Per dozen, \$
No. 1, " " 1/2 " .....	"
No. 2, " " 9-16 " .....	"



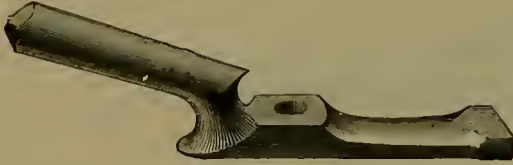
Offset.

Point Octagon Pattern.

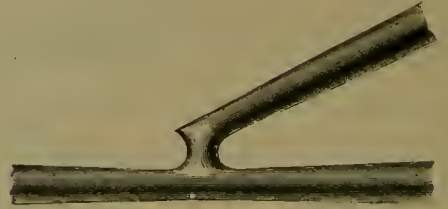
No. 0, Arm B, 7-16 inch diameter; Arms A, A, 3/8 inch diameter.....	Per dozen, \$
No. 1, " 1/2 " " " 7-16 " .....	"
No. 2, " 9-16 " " " 1/2 " .....	"

All the above made of Norway Iron.

## STAY ENDS AND OFFSETS.



Stay End, No. 3.



Offset, No. 2.

## Stay Ends.

## ROUND PATTERN

Size, inches.....	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16
No. 1, per dozen.....	\$			
No. 3 ".....				

## OVAL PATTERN

Size, inches.....	9-16x $\frac{3}{8}$	$\frac{5}{8}$ x $\frac{3}{8}$	$\frac{3}{4}$ x7-16	$\frac{7}{8}$ x $\frac{1}{2}$
No. 6, Per dozen.....	\$			

## Offsets.

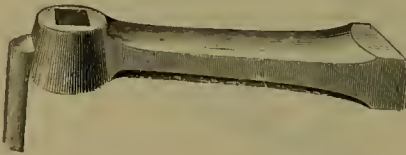
## ROUND PATTERN.

Size, inches.....	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16
No. 2, Per dozen.....	\$			

## OVAL PATTERN.

Size, inches.....	9-16x $\frac{3}{8}$	$\frac{5}{8}$ x $\frac{3}{8}$	$\frac{3}{4}$ x7-16	$\frac{7}{8}$ x $\frac{1}{2}$
No. 7, Per dozen.....				

## BODY LOOPS.



Single Lip.



Double Lip.

## Single Lip.

For Spring Bar, inches.....	$\frac{7}{8}$	1	$1\frac{1}{8}$
Diameter of Hole, inches.....	5-16	5-16	$\frac{3}{8}$
Per dozen.....	\$		

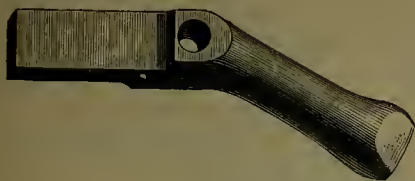
## Double Lip.

For Spring Bar, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$
Diameter of Hole, inches.....	$\frac{1}{4}$	5-16	5-16	$\frac{3}{8}$
Per dozen.....	\$			

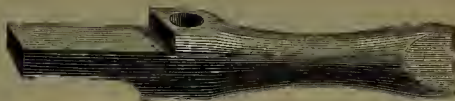
All of the above made of Norway Iron.



## STAY END TIES.



Bent.



Straight.

### Round.

Size, inches.....	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16
Per dozen.....	\$			

### Oval.

Size, inches.....	9-16x $\frac{3}{8}$	$\frac{5}{8}$ x $\frac{3}{8}$	$\frac{3}{4}$ x7-16	$\frac{7}{8}$ x $\frac{1}{2}$
Per dozen.....	\$			

## FELLOE PLATES.

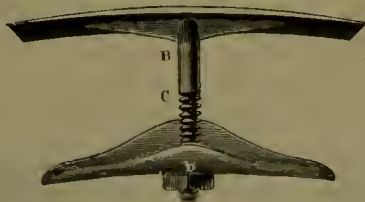
Philadelphia Pattern.



For  $\frac{3}{4}$ ,  $\frac{7}{8}$ , 1,  $1\frac{1}{8}$ ,  $1\frac{1}{4}$ ,  $1\frac{3}{8}$ ,  $1\frac{1}{2}$ ,  $1\frac{5}{8}$ ,  $1\frac{3}{4}$  and 2 inch rims.....Cts per lb.

## FELLOE HOLDERS.

MELLYN'S.



For Rims, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Per set of eight pieces.....	\$					

## SPRING SHACKLES.

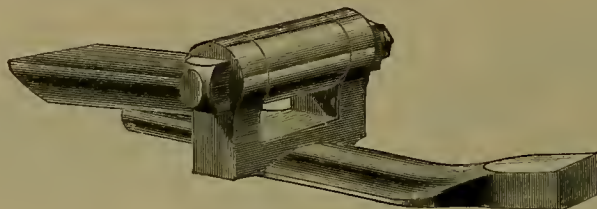
Side Bar, Plain Pattern.



For Spring, inches.....	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Per dozen pairs.....	\$		

All of above made of Norway Iron.

## SHAFT AND POLE COUPLINGS.



## Black.

	Light.				Heavy.			Extra Heavy.	
Size, inches.....	7-8	1	1	1 1/8	1 1/4	1 1/2	1 3/4	1 3/4	2
Diameter Bolt, inches.....	5-16	5-16	3/8	3/8	7-16	7-16	1/2	1/2	5/8
Per dozen Pairs.....	\$								



## Bright.

	Light.				Heavy.				
Size, inches.....	7-8	1	1	1 1/8	1 1/4	1 1/2	1 3/4	1 3/4	2
Diameter Bolt, inches.....	5-16	5-16	3/8	3/8	7-16	7-16	1/2	1/2	5/8
Per dozen Pairs.....	\$								

## SHAFT AND POLE EYES.



Shaft.



Pole.

## Shaft Eyes.

	Light.				Heavy.				
Size, inches.....	7-8	1	1	1 1/8	1 1/4	1 1/2	1 3/4	1 3/4	2
Diameter Bolt, inches.....	5-16	5-16	3/8	3/8	7-16	7-16	1/2	1/2	5/8
Black, per dozen Pairs.....	\$								
Bright, " " .....									

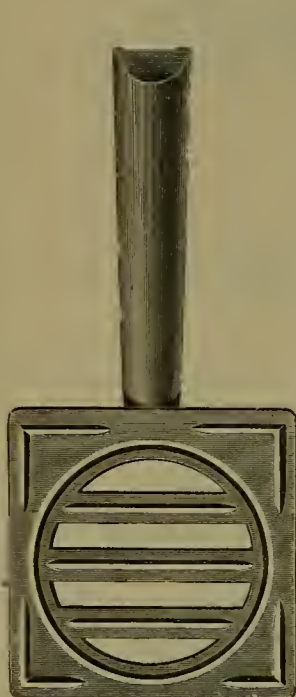
## Pole Eyes.

Size, inches.....	1	1 1/8	1 1/4	1 1/2	1 3/4	2
Diameter Bolt, inches.....	5-16	3/8	7-16	7-16	1/2	5/8
Bright, per dozen pairs .....	\$					

All of the above made of Norway Iron.



## STEP PADS.



Ring Pattern.



Horse Shoe Pattern.



Three Leaf Pattern.

## Ring Pattern.

No. 0, $2\frac{7}{8}$ by 3 inches.	Per dozen pairs, \$
No. 1, $3\frac{1}{4}$ by $3\frac{3}{8}$ "	"
No. 2, $3\frac{5}{8}$ by $3\frac{3}{4}$ "	"

## Horse Shoe Pattern.

No. 0, 3 by $3\frac{1}{2}$ inches.	Per dozen pairs, \$
No. 1, $3\frac{3}{8}$ by $3\frac{7}{8}$ "	"
No. 2, $3\frac{3}{4}$ by $4\frac{1}{4}$ "	"

## Three Leaf Pattern.

No. 0, 3 by $3\frac{1}{2}$ inches.	Per dozen pairs, \$
No. 1, $3\frac{3}{8}$ by 4 "	"
No. 2, $3\frac{3}{4}$ by $4\frac{1}{2}$ "	"

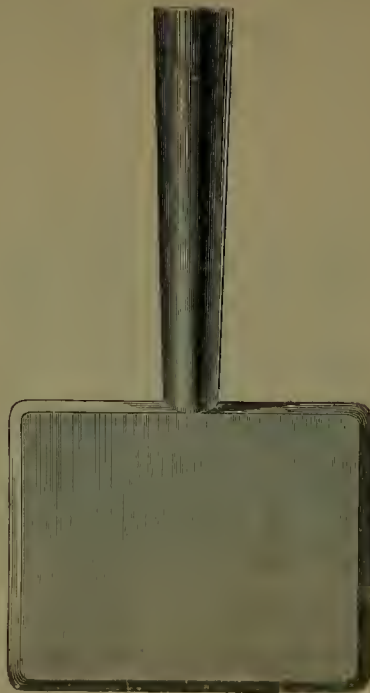
All the above made of Norway Iron.



## STEP PADS.



Open Stripe Pattern.



Plain Square Pattern.

### Open Stripe Pattern.

No. 0, 3 by  $3\frac{1}{2}$  inches.... Per dozen pairs, \$  
 No. 1,  $3\frac{3}{8}$  by 4 " .... "  
 No. 2,  $3\frac{3}{4}$  by  $4\frac{1}{2}$  " .... "

### Plain Square Pattern.

No. 0, 3 by  $3\frac{1}{2}$  inches.... Per dozen pairs, \$  
 No. 1,  $3\frac{3}{8}$  by 4 " .... "  
 No. 2,  $3\frac{3}{4}$  by  $4\frac{1}{2}$  " .... "

## SIDE BAR STEPS.



### Plain & Fluted Pattern.

With Finished Yoke.

No. 1, Plain .... Per dozen Pairs, \$  
 No. 2, " .... "  
 No. 1, Fluted .... "  
 No. 2, " .... "



### Stripe Pattern.

With Finished Yoke. For  $1\frac{1}{8}$  and  $1\frac{1}{4}$  inch Bar.

No. 0, 3 by  $3\frac{1}{2}$  inches.. Per dozen pairs, \$  
 No. 1,  $3\frac{3}{8}$  by 4 " .... "

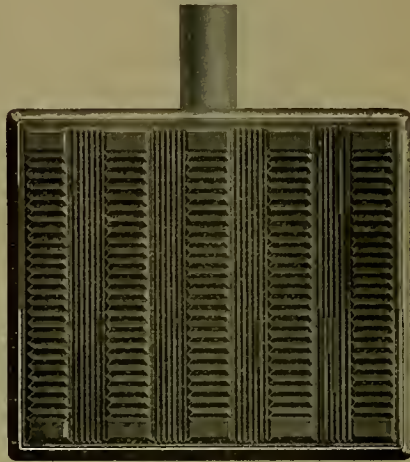
All the above made of Norway Iron.



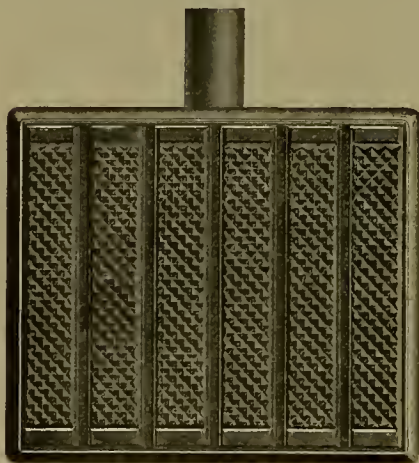
STEP PADS.



Star Pattern.



Colonel FURCH.



**Diamond Pattern.**



Plain Pattern.

### Rubber Covered.

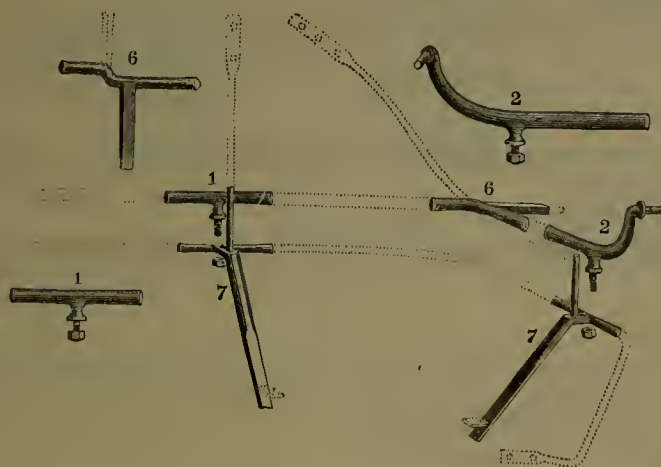
Forged.

Pattern.....	Plain.	Star.	Channel.	Diamond.
--------------	--------	-------	----------	----------

No. 1, 3x3½ inches, Forged.....\$

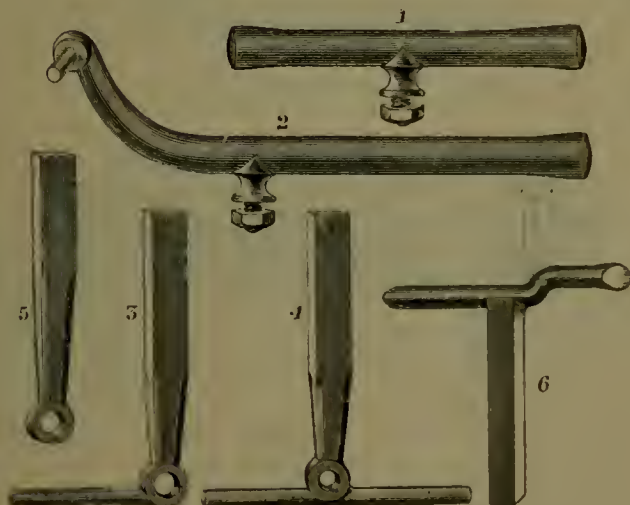
No. 2, 3 1/2 x 4      "      "      .....

# IMPROVED SHIFTING CARRIAGE RAIL.



## Spare's.

2 pieces each, Nos. 1, 2, 6 and 4 of No. 7 for a set of Single Rails. . . . . Per set, \$



## Seward's.

2 pieces each, Nos. 1, 2, 3, 5 and 6 for a set of Single Rails. . . . . Per set, \$

Extra pieces for above carried in stock.

Made of Norway Iron.

## FORGED SLAT IRONS.



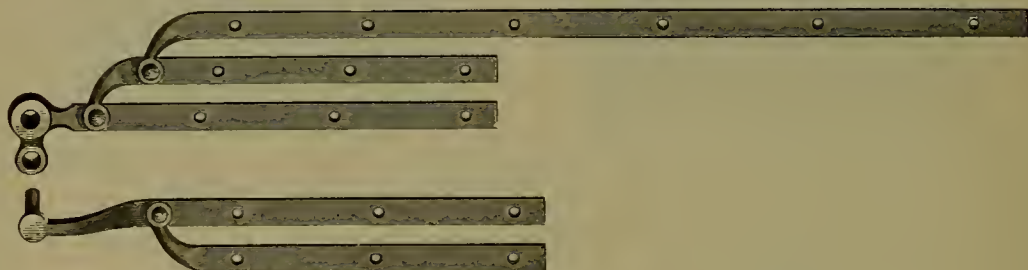
## Oval Socket, Three Bow Pattern.

Three Bow, with two long Bows..... Per dozen sets, \$



## Oval Socket, Four Bow Pattern.

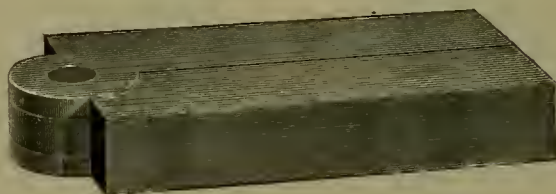
Four Bow, with two long Bows..... Per dozen sets, \$



## Philadelphia Extension Top Pattern.

Five Bow, Extension Top..... Per dozen sets, \$

## STUMP JOINTS.



## Milled.

Size, inches.....	$\frac{1}{2} \times \frac{1}{2}$	9-16x $\frac{3}{8}$	9-16x7-16	9-16x $\frac{1}{2}$	$\frac{5}{8} \times \frac{3}{8}$	$\frac{5}{8} \times 7-16$
Per dozen.....	\$					
Size, inches.....	$\frac{5}{8} \times \frac{1}{2}$	$\frac{5}{8} \times \frac{3}{8}$	$\frac{3}{4} \times \frac{3}{8}$	$\frac{3}{4} \times 7-16$	$\frac{3}{4} \times \frac{1}{2}$	$\frac{3}{4} \times \frac{3}{4}$
Per dozen.....	\$					

## JOINT ENDS.



## Oval Iron.

Size, inches,  $\frac{5}{8} \times \frac{3}{8}$ , with holes 13 32..... Per set, \$

## TOP PROPS, NUTS AND RIVETS.



Props.



No. 13.

No. 18.



Rivets.

### Top Props.

$\frac{3}{8}$	Shank, without Nuts or Rivets.....	Per set, \$
$\frac{3}{8}$	“ with No. 13 Nuts and Rivets.....	“
$\frac{3}{8}$	“ “ 18 “ “.....	“

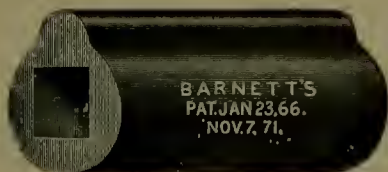
### Nuts.

No. 13, Solid, Silver Capped Nuts, with $\frac{7}{8}$ inch Cap.....	Per gross, \$
No. 18, Imitation Stitched, Black Enameled Nuts.....	“

### Rivets.

Capped to match Nuts, same list as Nuts.

## TOP PROP BLOCKS.



### Rubber.

In strips of two feet.....	Per foot, \$
----------------------------	--------------

## ANTI-RATTLERS.



Rubber.



Thurber's.

### Rubber.

1 and $1\frac{1}{4}$ inch, in strips 2 feet long.....	Per lb., Regular, \$	Extra, \$
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### Thurber's.

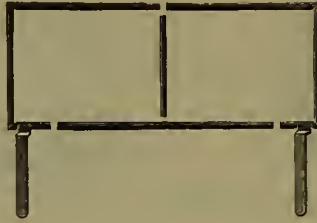
Steel Wire, Japanned.....	Per dozen pairs, \$
---------------------------	---------------------

## Rubber Spring Bumpers.

No. 1, $1\frac{1}{2}$ inch wide, 3 inches high, 7 inches long.....	Per lb., Regular, \$	Extra, \$
No. 2, $1\frac{3}{4}$ “ 3 $\frac{1}{2}$ “ 8 $\frac{1}{2}$ “ “.....	“	“
No. 3, 2 “ 4 “ 9 “ “.....	“	“



## DASH FRAMES AND PARTS.



## Frames.

In parts..... Per dozen sets, \$

## Feet.

For Deep Bodies.

1 1/4 inch offset..... Per dozen pairs, \$

Forged from Solid Norway Iron

## SOLID COLLARS.



Diameter, inches.....	1/4	5-16	3/8	7-16	1/2	9-16	5/8	3/4	7/8
Per dozen.....\$									

## LEATHER DASHES.



Straight.

## Straight and Curved.

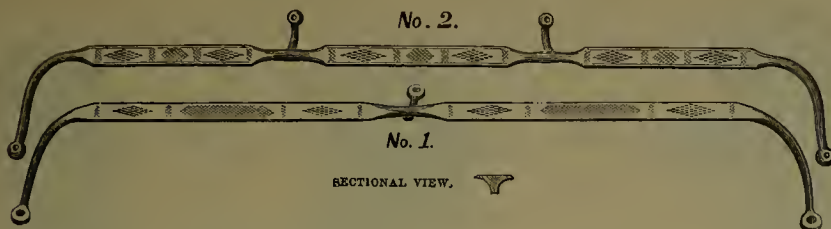
Complete with Feet and Bolts.

Length, inches.....	22	24	25	26	27	28	30
Height, 11 inches, each.....\$							
Height, 15 ".....							
Length, inches.....	32	33	34	36	38	40	42
Height, 11 inches, each.....\$							
Height, 15 ".....							

Extra sizes on hand.



## FOOT RAILS.



No. 1, with Raised Surface, 19 to 30 inches long.....	Per dozen, \$
No 2, " " 31 " 34 " .....	"

No 2, " " 31 " 34 " .....

BODY TOP CORNER IRONS.



Square Corner.

Width, inches.....	$\frac{1}{4}$	5-16 and $\frac{3}{8}$	7-16	$\frac{1}{2}$
Per dozen sets.....	\$			

Per dozen sets.....	\$
---------------------	----

Round Corner.

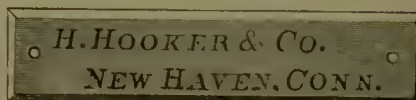
Width, inches.....	1/4	5-16 and 3/8
Per dozen sets.....	\$	

Per dozen sets . . . . . \$4

A set consists of one pair each Long ( $19 \times 3\frac{1}{4}$  inches) and Short ( $3\frac{3}{4} \times 3\frac{3}{4}$  inches).

## NAME PLATES

Silver and Gold Plated.



No 500

Nos. . . . . 800 Gold.

800 Silver.

No. 149.

900 Gold.

900 Silver.

Per dozen.....\$

Marked to order.



No. 2.

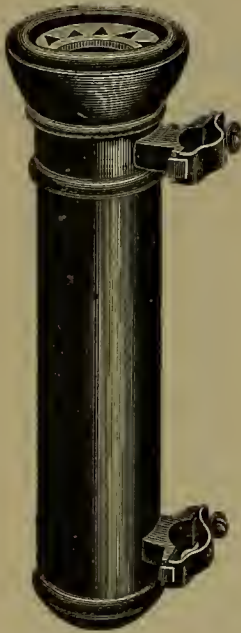
No. 3.

# CARRIAGE KNOBS.

Japanned ; to Drive.

[illegible]

# WHIP SOCKETS.



No. 18.



No. 25 1/2.



No. 55.

## Rubber Top.

No. 18, Metal, 6 1/2 inches long, Excelsior Fastener, (as No. 25 1/2)..... Per dozen, \$  
 No. 25 1/2, Wood, 6 3/4 " " " plated band,..... "

## Excelsior Holder.

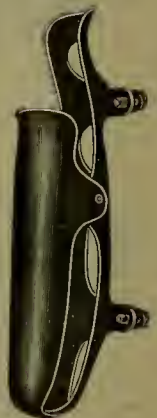
No. 55, Metal, Excelsior Fastener..... Per dozen, \$



No. 11.

## Rubber Top.

No. 11, Metal, Excelsior Fastener..... Per dozen, \$  
 No. 64, Metal, for Leather Dash.... "




No. 64.

# MALLEABLES.


Cts. per lb. . . . . Plain. Core. Swivel.

## Whiffletree Ferrules.


### CLOSED END.

No. 5		Sizes . . . . .	A	B	C	D	E
		Inside diameter, large end, inches . . . .	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
		Depth, inches . . . . .	15-16	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$


### CALIFORNIA SQUARE PATTERN.


No. 10		Sizes . . . . .	D	E	F	G	H	J	K
		Inside diam., small end, inches . . . .	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$
		Depth, inches . . . . .	1 15-16	2 1-16	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{7}{8}$	3 1-16


### CALIFORNIA ROUND PATTERN.

No. 20		Sizes . . . . .	A	B	C	D	E	F	G	H	J	K
		Inside diam., small end, in . . . . .	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$
		Depth, inches . . . . .	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{8}$


## Whiffletree Sockets.

No. 216		Diameter, large end, inches . . . . .	$\frac{7}{8}$	1
		Length, inches . . . . .	4	4


No. 217		Diameter, large end, inches . . . . .	$\frac{7}{8}$	1
		Length, inches . . . . .	4	4

No. 105		Sizes . . . . .	A	B
		Diameter, large end, inches . . . . .	$\frac{7}{8}$	1
		Length, inches . . . . .	$3\frac{1}{4}$	$3\frac{5}{8}$

## Whiffletree Tongues.

No. 30		Sizes . . . . .	A	B	C
		Plain Shank, diameter, inches . . . . .	5-16	$\frac{3}{8}$	7-16
		Length, inches . . . . .	$2\frac{3}{4}$	$3\frac{1}{4}$	$3\frac{5}{8}$

No. 35		Sizes . . . . .	A	B	C
		Screw Shank, diameter, inches . . . . .	5-16	$\frac{3}{8}$	7-16
		Length, inches . . . . .	$2\frac{3}{4}$	$3\frac{1}{4}$	$3\frac{5}{8}$

No. 70		Sizes . . . . .	A	B
		Screw Shank, diameter, inches . . . . .	$\frac{3}{8}$	7-16
		Length, inches . . . . .	3	$3\frac{1}{4}$

# MALLEABLES.

## Whiffletree Hooks.

No. 120

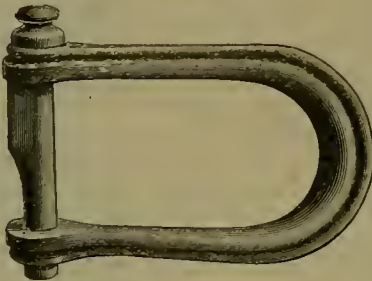


Sizes .....	A	B	C
Inside diameter, small end, inches .....	1	1 1/8	1 1/4
Depth, inches .....	1 1/4	1 1/2	1 1/2
Length, inches .....	3	3 1/2	3 1/2

Right and Left, in pairs.

## Doubletree Clevises.

No. 375

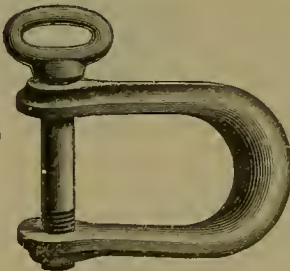


RIBBED PATTERN.

Patent Pin.

Nos .....	330	345	355	370	375
Width inside, inches...	2	2	2	2 1/4	2 1/2
Entire length .....	4 1/4	4 3/4	5 1/2	5 1/2	6

No. 480



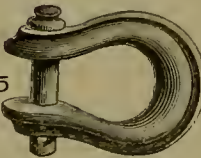
OVAL PATTERN.

Screw Pin.

2 inches wide inside; 4 1/2 inches entire length.

## End Clevises.

No. 2815



Nos .....	2805	2810	2815
Width inside, inches .....	3/4	7/8	7/8
Length, inches .....	3	3 1/2	4

## Whiffletree Plates.

No. 600



3 1/4 in. long; 5-16 in. hole.

No. 625



(Design patented.) 4 in. long; 5-16 in. hole.

No. 630



4 1/2 in. long; 3/8 in. hole.

No. 605



No. 615



No. 610



No. 620




(Design patented.) 3 inches long; 5-16 inch hole.

(Design patented.) 3 3/4 inches long; 5-16 inch hole.





## MALLEABLES.


### Whiffletree Front Plates.

No. 650		Design Patented.					
		Sizes.....	A	B	C	D	E
		Width, inches.....	1 3/8	1 1/2	1 5/8	1 3/4	2
		Length, ".....	4	4 1/8	4 1/2	4 3/8	4 3/4
		Hole, ".....	5-16	3/8	3/8	7-16	1/2

### Whiffletree Couplings.

No. 690		In Pairs. Design Patented.					
		HIGH PATTERN.					
		Sizes.....	A	B	C	D	
		Width, inches.....	1 3/8	1 1/2	1 5/8	1 3/4	
		Length, ".....	3 1/2	3 7/8	4 1/8	4 3/8	

No. 695		LOW PATTERN.									
		Design Patented.									
		Sizes . . . .	A	B	C	D	E	F	G	H	J
		Width, in	1 3/8	1 1/2	1 3/4	2	2 1/8	2 1/4	2 1/2	2 3/4	3
		Length, "	3 3/4	4	4 3/8	4 3/4	5	5 1/4	5 3/4	6	6 1/2
		Hole, "	5-16	3/8	3/8	3/8	7-16	7-16	7-16	7-16	

No. 705		WITH STOP.					
		Design Patented.					
		1 3/4 inches wide, 4 1/2 inches long, 3/8 inch hole.					

No. 750

## Wagon Circles.

Sizes .....	A	B	C
Bed, inches.....	1 $\frac{3}{4}$	2	2
Diameter, inches....	14	14	14
Width Circle " .....	1	1	1
Thickness Bed, inches....	$\frac{3}{4}$	$\frac{3}{4}$	1
Hole, " .....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$



## MALLEABLES.

## D Fifth Wheels.

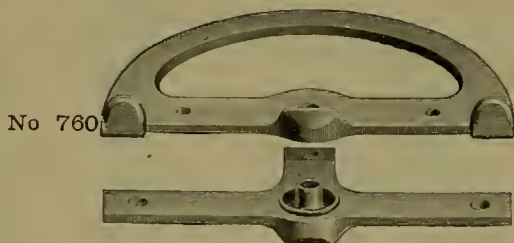


No. 755

With Flanged Top and Bottom for Double Perch.

1½ inch Bed ; 11¾ inches long.

¾x¼ inch Circle ; ½ inch Hole.



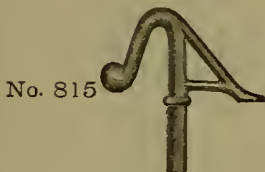
No. 760

With Flanged Top and Bottom for Single Perch.

1¾ inch Bed ; 13½ inches long.

1x¾ inch Circle ; ½ inch Hole.

## Hold Backs.



No. 815

Sizes.....	A	B	C	D
For Strap, inches.....	1	1½	1¼	1½
Shank, inches.....	¼	5-16	⅜	7-16
Length, inches.....	2¼	2⅝	3⅝	3⅝

## Shaft Tips.



No. 825

Sizes.....	A	B	C	D	E
Diameter, inches.....	¾	⅞	1	1⅝	1¼
Length, inches.....	1⅝	1¾	1¾	1⅞	2

## Neck Yoke Tips.

BEADED END



No. 830

Sizes.....	A	B	C	D	E
Diameter, inches.....	¾	⅞	1	1⅝	1¼
Length, inches.....	4	4⅝	4⅝	4¾	5

Made with hole tapering to inside to save shouldering and cutting grain of wood.

## Pole Tips.



No. 845

BEADED END.

Size A, 6 inches long, 1⅝ inches diameter.

No. 850	Same Pattern.	7 inches long.	Sizes.....	A	B	C	D	E
			Diameter, inches.....	1¼	1⅝	1½	1⅝	1¾

Made with hole tapering to inside to save shouldering and cutting grain of wood.

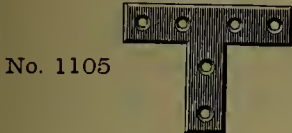
# MALLEABLES.

## T and Shaft Irons.



No. 1095

7  $\frac{7}{8}$  inches long.  
In Pairs, Right and Left.



No. 1105

Sizes	A	B	C
Length, inches	2 $\frac{3}{4}$	3 $\frac{3}{8}$	3 $\frac{3}{4}$
Height, "	2 $\frac{1}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$

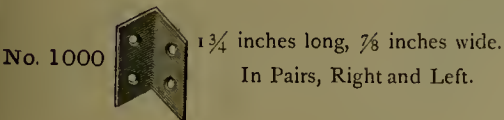
## Concealed Joints.



No. 1420

Sizes	A	B	C	F
	11	12	13	17 inches center
to center of Holes. Holes are counter-sunk on both sides and can be used right and left.				
Unless ordered plain castings, not riveted, Joints will be furnished, Riveted and Japanned.				

## Corner Irons.



No. 1000

1  $\frac{3}{4}$  inches long,  $\frac{7}{8}$  inches wide.  
In Pairs, Right and Left.



No. 1010

3  $\frac{1}{8}$  inches long, 1 inch wide.  
In Pairs, Right and Left.



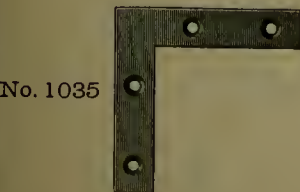
No. 1005

2  $\frac{3}{8}$  inches long, 1 inch wide.  
In Pairs, Right and Left.



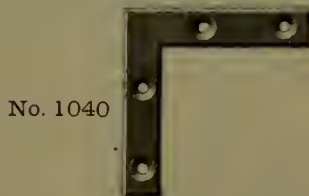
No. 1015

BOTTOM CORNER.  
2  $\frac{3}{4}$  x 2  $\frac{3}{4}$  x 3  $\frac{7}{8}$  inches.



No. 1035

BEVELED EDGE	
A	B
5 $\frac{5}{8}$	3 $\frac{3}{4}$ in. wide.
3 $\frac{1}{2}$	3 $\frac{1}{2}$ in. long.



No. 1040

SQUARE EDGE
G
7 $\frac{5}{8}$ inch wide.
4 inches long.



No. 1075

4  $\frac{3}{4}$  inches long,  $\frac{1}{4}$  inch wide.  
Square Corner.

# MALLEABLES.

## Seat Risers.

No. 1305



STRAIGHT PATTERN.

Design Patented.

A	B
6	7 inches high.
13¼	14 inches wide.

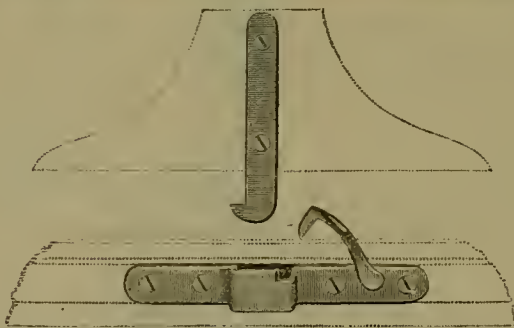
No. 1310



BEVELED PATTERN.

A	B
6	7 inches high.
14	14 inches wide.

## Seat Fastener.



COMMON SENSE.

Per dozen sets . . . . . \$

## Thumb Nuts.

LOW PATTERN

No 1405



Sizes . . . . .	A	B	C	D	E
For Rods, inches . . . . .	¼	5-16	¾	7-16	½
Height . . . . .	11-16	¾	¾	15-16	1

HIGH PATTERN.

No. 1410



Sizes . . . . .	A	B	C	D	E
For Rods, inches . . . . .	¼	5-16	¾	7-16	½
Height . . . . .	15-16	1	1 1/8	1 3-16	1 5-16

Above Nuts have straight holes, same as drilled (not tapered), and are ready to tap

# MALLEABLES.

## Seat Handles.

No. 1225



Right and Left, in pairs.  
For 4 1/4 inch Seat Back.

No. 1230



Right and Left, in pairs.  
For 5 1/8 inch Seat Back.

## Seat Braces.

No. 1245



For Three Spring Wagons.

Width of Seat Back, 4 5/8 inches.

May be used with Handle No. 1225.

No. 1250



Width of Seat Back 4 3/4 inches.  
May be used with Handle No. 1225.

No. 1255



Width of Seat Back 6 inches.  
May be used with Handle No. 1230

## Check Loops.

No. 2000



Sizes	A	B	C	D	E	F
Loop, inches.	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4
Length, inches.	2 1/4	2 1/4	2 3/4	3	3 1/4	3 1/2

## MALLEABLES.

### Neck Yoke Loops.

No. 2005



4½ inches long, 2¾ inch loop.

### Body Loops.

OVAL.

No. 2040



Sizes .....	A	B	C	D	E	F
Loop, inches.....	¾	⅞	1	1⅛	1¼	1½
Length, inches.....	1⅝	1⅞	2	2	2	2¼

### Perch Loops.

OVAL.

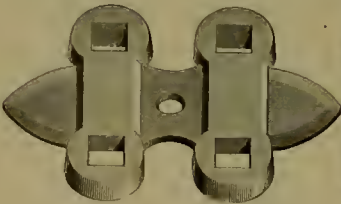
No. 2050



Sizes .....	C	D	E	F
Loops, inches.....	1	1⅛	1¼	1½
Length, inches.....	2¾	2⅞	3	3⅞

### Spring Ties and Plates.

No. 2180



In Pairs.

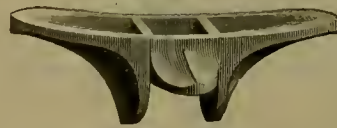
Sizes .....	A	B	C	E
For Springs, in... 1¼	1¼	1⅜	1½	1½
For Axles, in... 1	1⅛	1⅞	1¾	1¾

Spring Top Plate, with Square Holes.

Axle Bottom Plate, with Round Holes.

### Spring and Axle Blocks.

No. 2190



Design Patented.

Sizes .....	A	B	C	D	E	F
For Spring, inches. 1¼	1¼	1⅜	1⅞	1⅞	1½	1¾
For Axle, inches... 1	1⅞	1⅞	1⅞	1¼	1¼	1⅞
Length, inches.... 5¼	5¼	5⅜	5⅞	5⅞	5⅞	6

No. 2195



Design Patented.

Sizes .....	A	B	C	D	E	F
For Spring, inches. 1¼	1¼	1⅜	1⅞	1½	1½	1½
For Axle, inches... 1	1⅞	1⅞	1⅞	1⅞	1¼	1⅞
Length, inches.... 6	6¼	7¼	7¼	7¼	7½	7½
Hole, inches..... 5-16	5-16	⅜	⅜	⅜	7-16	7-16

### Side Spring Shackles.

No. 2240



Sizes .....	A	C	D	E
For Spring, inches... 1¼	1¼	1½	1¾	2
Length, inches..... 1¾	2¼	2⅞	2⅞	2⅞



# MALLEABLES.

## Spring Shackle Holders.



No. 2245

Sizes.....	B	C	D	E
Width, inches.....	1 1/4	1 1/2	1 3/4	2
Bearing, inches.....	1 1/4	1 1/4	1 1/2	1 1/2
Holes, inches.....	3/8	3/8	3/8	3/8

## Barrel Shackle Links or Hangers.



No. 2255

In Pairs. Medium Pattern, 3/8 inch Thick.

Sizes.....	A	B	C	D	E
Center to center of holes, inches	1	1 1/4	1 3/8	1 1/2	1 5/8
Holes, inches.....	3/8	3/8	3/8	3/8	3/8

## Axle Nuts.

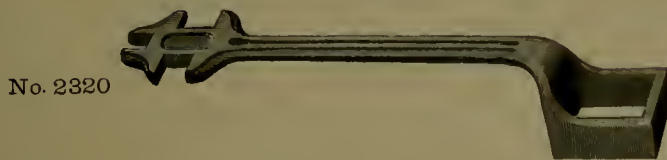
Closed End. For Iron Axle, with Rim.



No. 2285

Sizes.....	B	C	D	E
Size of Nut, inches.....	3/4	7/8	1	1 1/8
Diameter of hole, inches.....	7/8	1	1 1/8	1 1/4
Diameter of Flange, inside, inches ....	1 3/8	1 9/16	1 23/32	2 1-3/2
Depth, inches.....	1 1-16	1 3-16	1 3-16	1 1/4
For Axle, inches.....	3/8	1	1 1/8	1 1/4

## Wrenches.



No. 2320

Sizes.....	A	B	C	D	E	F	G
For Axle Nuts, inches.....	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
Length, inches.....	8 1/2	9	9 1/4	9 3/4	10	10 1/4	10 1/2

No. 2385



Design Patented

Sizes.....	A	B	C	D
For Nuts, inches	3/8 & 1/2	1/2 & 5/8	5/8 & 3/4	3/4 & 7/8
Length, inches.	6	6 3/4	7 3/8	8 1/2

No. 2340



Design Patented.

A  
For 1/2, 5/8, 3/4 and 7/8, 1, 1 1/4 inch Nuts.  
10 1/2 inches long

# MALLEABLES.

## Tail Board Hinges.

No. 1465



3 <sup>1</sup>/<sub>4</sub> inches long.  
For 5-16 " Rod.  
2 <sup>3</sup>/<sub>8</sub> " length of Screw  
To be used with No. 1470.

No. 1470



8 <sup>1</sup>/<sub>2</sub> inches long.  
5 <sup>5</sup>/<sub>8</sub> " wide.  
For 5-16 " Rod.  
To be used with No. 1465.

No. 1475



2 <sup>1</sup>/<sub>4</sub> inches long.  
2 <sup>1</sup>/<sub>4</sub> " wide.  
To fit No. 1480, A and B.

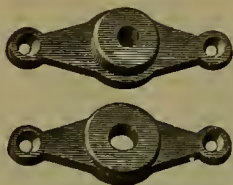
No. 1480



Sizes,	A	B
	9	13 inches long.
	3 <sup>3</sup> / <sub>4</sub>	1 " wide.
	5-16	5-16 " Rod.

## Tail Board Nuts and Washers.

No. 1485



In Pairs.

Sizes . . . . .	A	B	C
For Rod, inches . . . . .	5-16	3 <sup>3</sup> / <sub>8</sub>	7-16
Length, " . . . . .	3	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>

## Tail Board Handle Nuts.

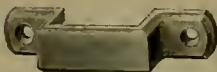
No. 1490



Sizes . . . . .	A	B	C
For Rod, inches . . . . .	5-16	3 <sup>3</sup> / <sub>8</sub>	7-16
Length, " . . . . .	3 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>

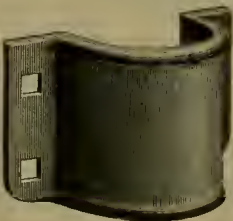
## Stake and Bow Irons.

No. 1520



Sizes . . . . .	B	G
Depth inside, inches . . . . .	5 <sup>5</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>
Width " " . . . . .	1 <sup>3</sup> / <sub>4</sub>	2
Length " " . . . . .	3 <sup>1</sup> / <sub>8</sub>	4

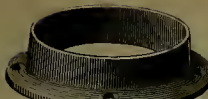

No. 1535

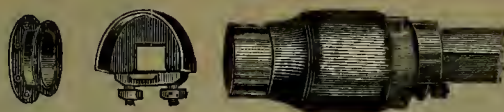


For 2 inch Stake.  
2 <sup>3</sup>/<sub>4</sub> inches deep.

# MALLEABLES.

## Sand Bands.

	FLANGED PATTERN TO SCREW.													
No. 2400	A	B	C	D	E	F	G	H	J	K				
	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4½				
	inch diameter inside small end.													
	RIM PATTERN TO DRIVE.													
No. 2410	A	B	C	D	E	F	G	H	J	K	L	M	N	O
	2	2⅛	2¼	2⅜	2½	2⅝	2¾	2⅞	3	3¼	3½	3¾	4	4¼
	inch diameter inside small end.													



## Farr's Patent.

### Standard Sizes for Square Iron Axles.

Nos	0	1	2	3	4	5	6	8	10
Axle, inches	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 3/4	2
Collar, not over inches	1 3/8	1 7-16	1 11-16	1 13-16	1 15-16	2 1/8	2 5-16	2 9-16	2 13-16
Per dozen sets	\$7 00	8 00	9 00	9 00	9 00	9 00	10 00	10 00	10 00

### Special Sizes for Square Iron Axles.

Nos	4 1/4	4 3/8	4 1/2	4 5/8	4 3/4
Axle, inches	1 1/4	1 5/8	1 1/2	1 5/8	1 3/4
Collar, not over, inches	2 1/2	2 3/4	3	3 1/4	3 1/2
Per dozen sets	\$10 50	10 50	10 50	12 00	12 00

### Sizes for original Concord Axles.

Nos	21 1/8	21 1/4	21 3/8	21 1/2
Axle, inches	1 1/8	1 1/4	1 3/8	1 1/2
Collar, not over, inches	2	2 3/16	2 5/16	2 5/8
Per dozen sets	\$9 00	9 00	10 50	10 50

## Swivels.



No. 2515

Size, length 3 1/8 inches, eye 3/4 inch.

No. 2520



### CHAIN, LIGHT PATTERN

Size	A	B	C	D
Length, in.	2 1/2	2 1/2	2 1/2	2 1/2
Eye, inch.	1 1/4	5-16	3/8	7-16



No. 2525

### CHAIN, HEAVY PATTERN.

Size	A	B	C	D	E	F
Length, inches	3	3 1/4	4 1/4	4 3/4	5	5 3/4
Eye, inch	3/8	7-16	1/2	5/8	3/4	7/8

## MALLEABLES.

## Step Pads.

Designs Patented.

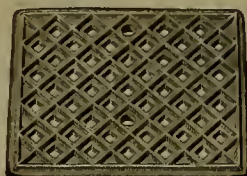
No. 1705

A  
3½ x 3½ inch.B  
4½ x 4½ inch

No. 1710

A  
3 x 3½ inch.B  
3½ x 4 inch.

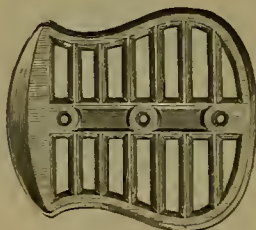
No. 1720

A  
3 x 3¾ inch.B  
3½ x 4¾ inch.

No. 1725

A  
3¾ x 3¾ inch.B  
3¾ x 3¾ inch

No. 419

No. 419.  
4 7⁄8 x 4 1⁄4 inch.No. 419½.  
4 1⁄8 x 3 3⁄8 inch.

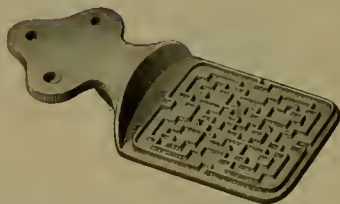
No. 1735

3¾ x 3¾  
inch

## Body Steps.

Designs Patented.

No. 1755

¾ inch drop; 3¼ x 3¼ inch Pad; 6¾ inch long.  
1 7⁄8 x 2 7⁄8 inch T; 5-16 inch Holes.

No. 1760

¾ inch drop; 3 x 3½ inch Pad; 6 inch long.  
1 7⁄8 x 2 7⁄8 inch T; 5-16 inch Holes.

No. 1765

¾ inch drop; 3¾ x 3¾ inch Pad; 6½ inch long.  
1 7⁄8 x 2 7⁄8 inch T; 5-16 inch Holes.

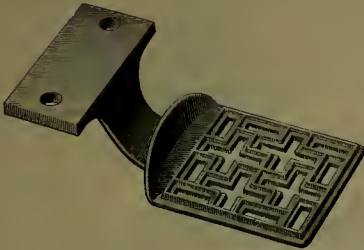


# MALLEABLES.

## Body Steps.

Designs Patented.

No. 1795



No. 1805



No. 1795.—1½ inch drop, 3⅞ by 3⅞ inch Pad, 6 inches long, 1⅜ inch sweep of Shank, 1½ by 3⅜ inch T, ⅜ inch Holes.

No. 1805.—1 inch drop, 3¾ by 3¾ inch Pad, 6 inches long, ½ inch sweep of Shank, 1¼ by 4½ inch T, 5-16 inch Holes.

No. 1815



No. 1820



No. 1815.—2 inch drop, 2⅞ by 3½ inch Pad, 5¼ inches long, 1 by 3¼ inch T, 1⅞ inch sweep of Shank, ⅜ inch holes

No. 1820.—2 inch drop, 3½ by 3½ inch Pad, 6 inches long, 1½ inch sweep of Shank, 1 by 3¼ inch T, ⅜ inch Holes

No. 1850



No. 1855



No. 1850.—2½ inch drop, 3⅞ by 3⅞ inch Pad, 1½ inch sweep of Shank, ¾ by 5 inch T, 10-8 inches long, 5-16 inch Holes.

No. 1855.—3 inch drop, 4 by 4 inch Pad, 1¼ inch sweep of Shank, 1 by 7 inch Shank, 12¼ inches long, ⅜ inch Holes.

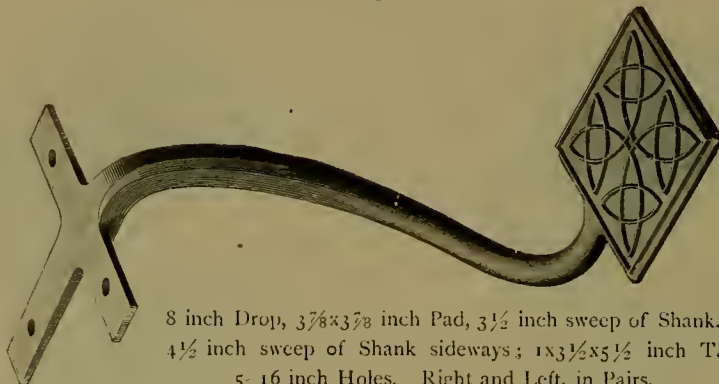


## MALLEABLES.

## Carriage and Wagon Steps.

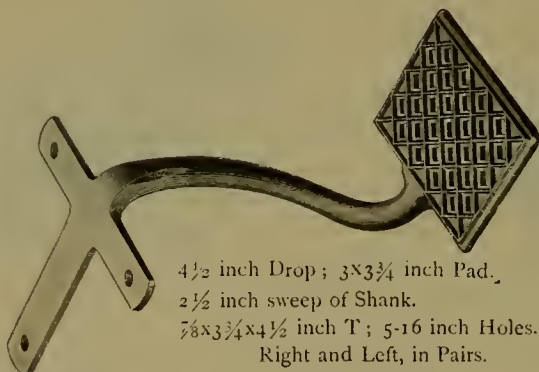
Designs Patented.

No. 1950



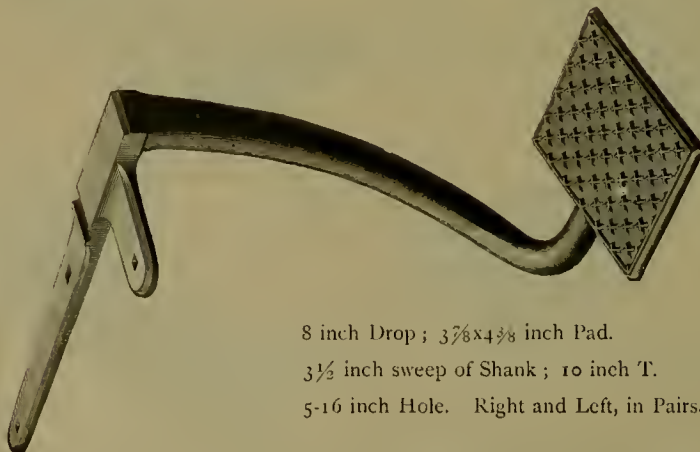
8 inch Drop,  $3\frac{7}{8} \times 3\frac{7}{8}$  inch Pad,  $3\frac{1}{2}$  inch sweep of Shank.  
 $4\frac{1}{2}$  inch sweep of Shank sideways;  $1 \times 3\frac{1}{2} \times 5\frac{1}{2}$  inch T.  
 5-16 inch Holes. Right and Left, in Pairs.

No. 1955



$4\frac{1}{2}$  inch Drop;  $3 \times 3\frac{3}{4}$  inch Pad.  
 $2\frac{1}{2}$  inch sweep of Shank.  
 $\frac{7}{8} \times 3\frac{3}{4} \times 4\frac{1}{2}$  inch T; 5-16 inch Holes.  
 Right and Left, in Pairs.

No. 1960



8 inch Drop;  $3\frac{7}{8} \times 4\frac{3}{8}$  inch Pad.  
 $3\frac{1}{2}$  inch sweep of Shank; 10 inch T.  
 5-16 inch Hole. Right and Left, in Pairs.

## MALLEABLES.

### Carriage and Wagon Steps.

Designs Patented.

No. 1965



12 inch drop ;  $3\frac{7}{8} \times 3\frac{7}{8}$  inch Pad.

$4\frac{1}{2}$  inch sweep of Shank ;  $1 \times 3\frac{1}{2} \times 5\frac{1}{2}$  inch T ; 5-16 inch Holes.

To be used with wrought Iron Brace.

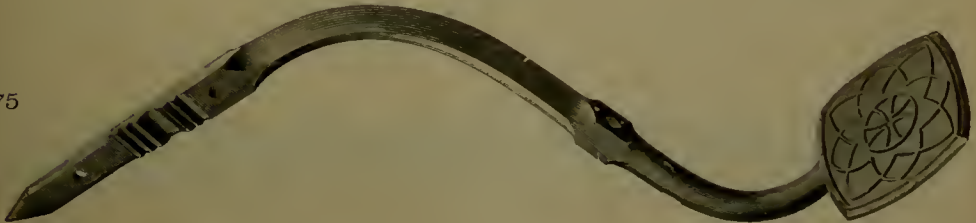
No. 1970



$9\frac{1}{2}$  inch drop ;  $3\frac{3}{4}$  inch Pad ; 7 inch sweep of Shank.

Right and Left, in Pairs.

No. 1975



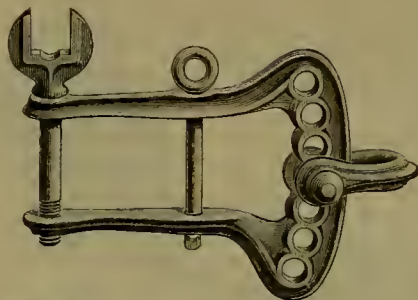
$10\frac{1}{2}$  inch drop ;  $3\frac{3}{4}$  inch Pad ; 7 inch sweep of Shank.

Right and Left, in Pairs.

## MALLEABLES.

### Clevises.

No. 2890

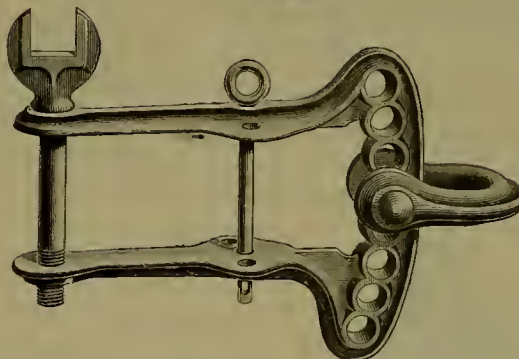


No. 2890.— $2\frac{1}{4}$  inch Beam ;  $3\frac{3}{8}$  inch from center of Wrench to center of Pin ; 2 inch in clear ;  $8\frac{3}{4}$  inches entire length ; 7 Holes.

No. 2895.— $2\frac{1}{2}$  inch Beam ;  $3\frac{5}{8}$  inch from center of Wrench to center of Pin ;  $1\frac{7}{8}$  inch clear ;  $9\frac{3}{4}$  inches entire length ; 7 Holes.

No. 2900.— $2\frac{5}{8}$  inch Beam ;  $3\frac{5}{8}$  inch from center of Wrench to center of Pin ;  $1\frac{7}{8}$  inch clear ;  $9\frac{3}{4}$  inches entire length ; 7 holes.

No. 2920



No. 2920.— $2\frac{3}{4}$  inch Beam ;  $4\frac{3}{8}$  inch from center of Wrench to center of Pin ;  $2\frac{3}{8}$  inch clear ;  $11\frac{1}{2}$  inches entire length ; 8 Holes.

No. 2925.—3 inch Beam ; 5 inch from center of Wrench to center of Pin ;  $3\frac{3}{8}$  inch clear ; 13 inches entire length ; 8 Holes.

### Wood Beam Clevises.

No. 2950



No. 2950.—Width of Beam  $2\frac{3}{4}$  inches ; distance between center of Holes  $3\frac{3}{8}$  inch.

No. 2955.—Width of Beam 3 inches ; distance between center of Holes  $4\frac{3}{4}$  inch.

## HARROW TEETH.

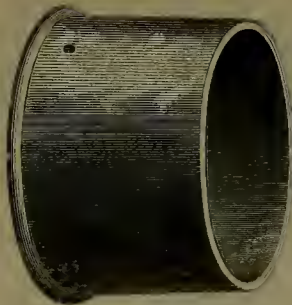


Steel,  $\frac{1}{2}$ ,  $\frac{5}{8}$  and  $\frac{3}{4}$  inch square, and  $\frac{1}{2}$  by  $\frac{5}{8}$  inch. . . . . Per lb, \$  
 Iron,  $\frac{3}{4}$  inch square. . . . . " "  
 100 lbs. in a box.

# RIM BANDS.



No. 2125.



No. 2430.

## Malleable Iron.

No. 2425, 1<sup>3</sup>/<sub>4</sub> inches deep.

Size.....	A	B	C	D	E	F	G	H	J	K	L	M	N
Diameter, inside large end, in.	2	2 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>
Per set, Polished and Turned..\$													
Per set, Nickel Plated.....\$													

No. 2430, 2 inches deep.

Size.....	J	K	L	M	N
Diameter, inside large end, inches.....	3	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>
Per set, Polished and Turned.....\$					
Per set, Nickel Plated.....\$					



Cincinnati.



Central Park.

## Composition, Nickle Plated.

CINCINNATI PATTERN.

1<sup>1</sup>/<sub>4</sub> inches deep.

Diameter, inside large end, inches.....	2	2 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>
Per set.....\$					

2 inches deep.

Diameter, inside large end, inches.....	2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>
Per set.....\$								

CENTRAL PARK PATTERN

1<sup>1</sup>/<sub>4</sub> inches deep.

Diameter, inside large end, inches.....	2	2 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>
Per set.....\$					

2 inches deep.

Diameter, inside large end, inches.....	2 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>
Per set.....\$								



## SHAFT TIPS.



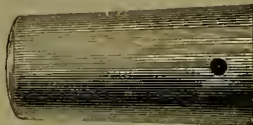
No. 825.

## Malleable Iron.

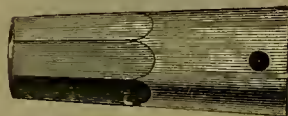
Size.....	B	C	D	E
Diameter, inches.....	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Length, ".....	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2
Japanned, per dozen pairs.....	\$			
Silver Plated, ".....				



No. 5.



Nos. 8 and 10.



No. 15.

## Composition. Nickel Plated.

No. 5,  $1\frac{1}{2}$  inches Long.

Diameter, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1
Per dozen pairs.....	\$2 30	2 42	2 70

No. 8,  $1\frac{3}{4}$  inches Long.

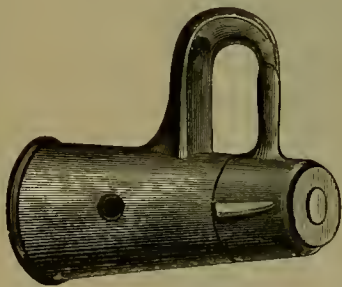
Diameter, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Per dozen pairs.....	\$2 80	3 00	3 30	3 85	4 40

## No. 10, Extra Heavy, 2 inches Long.

Diameter, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1
Per dozen pairs.....	\$4 50	5 00	5 75

No. 15, Extra Heavy,  $2\frac{1}{4}$  inches Long.

Diameter, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1
Per dozen pairs.....	\$11 00	12 50	15 50



## WHIFFLETREE HOOKS.

## Patent Spring.

Nos.....	1	2	3	4	5	6
Diameter, inches.....	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Per dozen pairs.....	\$5 00	5 00	5 75	6 50	7 50	8 50

## WHIFFLETREE TIPS.



No. 216.



No. 217.

## Malleable Iron, Nickel Plated.

## No. 216, 4 inches Long.

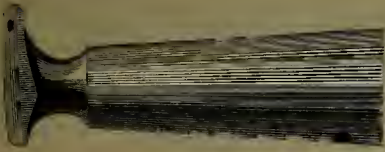
Diameter inside, large end, inches.....	$\frac{7}{8}$	1
Per dozen pairs.....	\$	

## No. 217, 4 inches Long.

Diameter inside, large end, inches.....	$\frac{7}{8}$	1
Per dozen pairs.....	\$	



## WHIFFLETREE TIPS.



No. 45.



No. 50.

### Composition, Nickle Plated.

No. 45, Extra Heavy,  $3\frac{1}{2}$  inches long.

Diameter, inches.....	78	I
Per dozen pairs.....	\$12 00	14 50

No. 50, Extra Heavy,  $3\frac{1}{2}$  inches long.

Diameter, inches.....	78	I
Per dozen pairs.....	\$17 50	22 00



No. 55.

No. 55, Extra Heavy,  $3\frac{1}{2}$  inches long.

Diameter, inches.....	78	I
Per dozen pairs.....	\$12 00	14 50



No. 60.

No. 60, Extra Heavy,  $3\frac{1}{2}$  inches long.

Diameter, inches.....	78	I
Per dozen pairs.....	\$17 50	22 00

## NECK YOKE TIPS.

### Malleable Iron, Silver Plated.

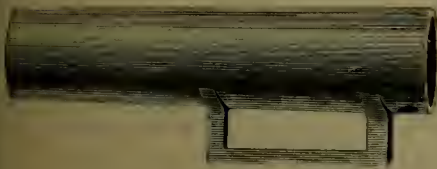
No. 830. Beaded End.



No. 830.

Size.....	B	C	D	E
Length, inches.....	4 $\frac{1}{8}$	4 $\frac{5}{8}$	4 $\frac{3}{4}$	5
Diameter, inches.....	78	I	1 $\frac{1}{8}$	1 $\frac{1}{4}$
Per dozen pairs.....	\$			

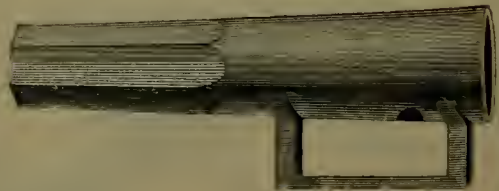
### Composition, Nickle Plated.



No. 80.

No. 80, Extra Heavy,  $4\frac{1}{2}$  inches long.

Diameter, inches.....	78	I
Per dozen pairs.....	\$13 50	16 50



No. 85.

No. 85, Extra Heavy,  $4\frac{1}{2}$  inches long.

Diameter, inches.....	78	I
Per dozen pairs.....	\$24 00	27 50

## POLE TIPS.



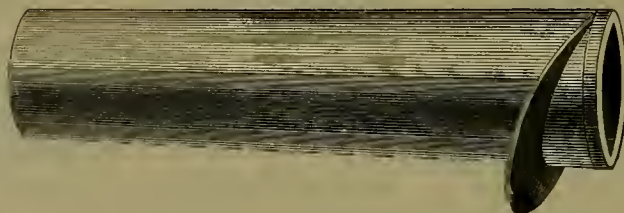
## Malleable Iron, Silver Plated.

No. 845. 6 inches long.

Size A,  $1\frac{1}{8}$  inches diameter..... Per dozen, \$

No. 850. 7 inches long.

Size.....	A	B	C	D	E
Diameter, inches.....	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$
Per dozen.....	\$				



## Composition, Nickel Plated.

No. 100. Extra Heavy.

Length, inches.....	$6\frac{1}{2}$	$6\frac{3}{4}$	7	7
Diameter, inches.....	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Per dozen.....	\$14 00	15 00	17 00	19 00

No. 105. Extra Heavy,  $6\frac{1}{2}$  inches long.

Diameter, inches.....	$1\frac{1}{8}$	$1\frac{1}{4}$
Per dozen.....	\$25 00	26 00

## BAND SETTERS.



For Hubs from 2 to 5 inches diameter..... Per dozen, \$36 00

# HUB BOXING MACHINES.



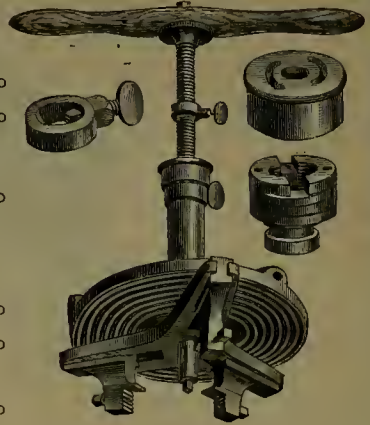
Silver's.

## Silver's.

- No. 1 ..... Each, \$25 00  
 No. 2 ..... " 30 00  
 Extra Mandrel and Bits for  
 No. 1 .... Each, \$3 00

## Dole's.

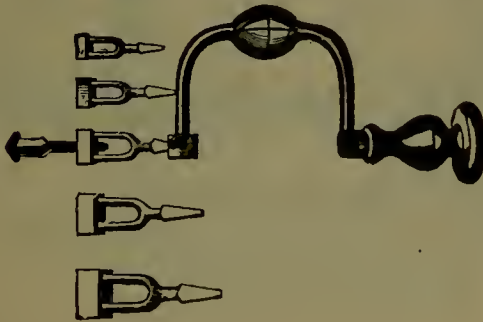
- No. 1 ..... Each, \$20 00  
 No. 2 ..... " 23 00  
 Extra Mandrel and Bits for  
 Nos. 1 and 2 .... Each, \$3 00



Dole's.

# BRACE WRENCHES.

For Carriage Makers and Blacksmiths use.



Sizes,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$ . Can be used in any Brace. .... Per set, \$1 00  
 Five in a set

# BOLT CLIPPERS.



Chamber's.



Well's.

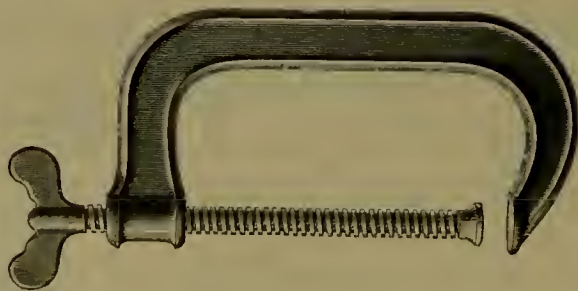
## Chamber's.

- No. 1, for  $\frac{3}{8}$  inch bolts and less ..... Each, \$7 50  
 No. 2, "  $\frac{1}{2}$  " " ..... " 9 00  
 No. 3, "  $\frac{5}{8}$  " " ..... " 12 00

## Well's.

Cutting parts of best steel, balance malleable iron. .... Each, \$7 00

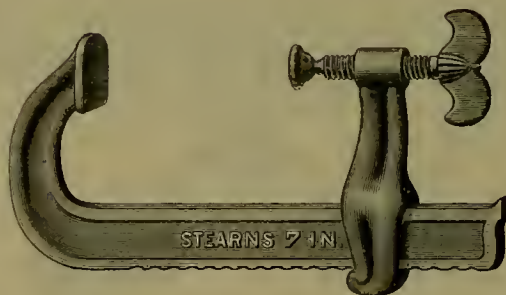
# MALLEABLE IRON CLAMPS.



**Japanned.**

With Clean Machine-cut Screws.

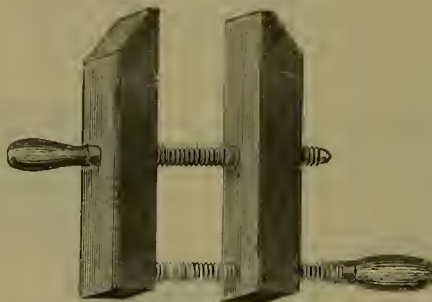
Opening, inches.....	2 1/2	3	4	5	6	7	8	10
Per dozen.....	..\$							



**Adjustable.**

Opening, inches.....	3	5	7	9	12
Per dozen.....	\$ 4 00	6 50	9 00	10 50	15 00

# HAND SCREWS.



Diameter of Screws, inches.....	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
Length, " ".....	8	10	14	16	18	20	24
Length of Jaws, " ".....	6	8	12	14	16	18	22
Per dozen.....	\$						



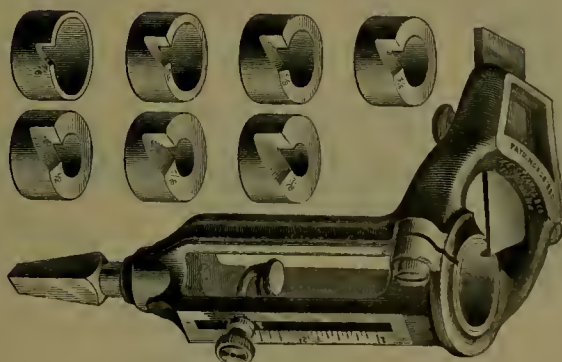
# HOLLOW AUGERS.

STEARN'S.



Adjustable.

No. 0, Cuts any size from  $\frac{1}{4}$  to  $1\frac{1}{4}$  inches..... Per dozen, \$48 00



Adjustable.

No. 1, Cuts  $\frac{3}{8}$ , 7-16,  $\frac{1}{2}$ , 9-16,  $\frac{5}{8}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$  and 1 inch..... Per dozen, \$48 00



Adjustable.

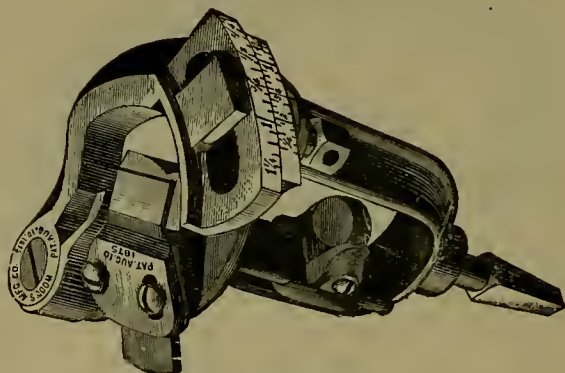
No. 3, Cuts any size from  $\frac{1}{4}$  to  $1\frac{1}{4}$  inches

Per dozen, \$60 00



## HOLLOW AUGERS.

WOODS.



Adjustable.

Cuts from  $\frac{1}{4}$  to  $1\frac{1}{4}$  inches. . . . . Per dozen, \$60 00

AMES.

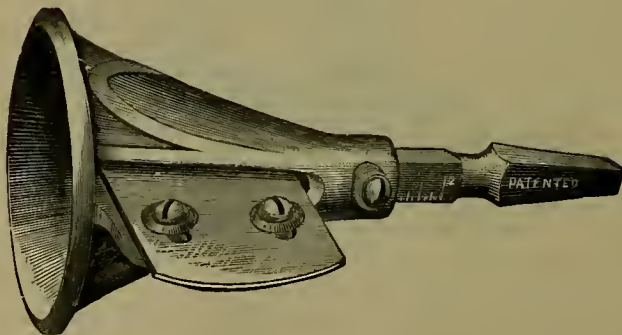


With Cook's Patent Bits.

Size, inches . . . . .	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Per dozen . . . . .	\$12 00	12 00	14 00	14 00	16 00	16 00	20 00	20 00	24 00	24 00

## SPOKE POINTERS.

STEARNS.



No. 1, Small size . . . . .	Per dozen, \$9 00
No. 2, Large size . . . . .	" 15 00

## SPOKE SHAVES.



Without Screws.



With Screws.

### Beechwood.

Size of Cutter, inches.....	2½	3	3½
Plain, per dozen.....\$			
Plated ".....			
Plated, with Screws, per dozen.....			

### Iron.



No. 51.



No. 52.

No. 51, Double Iron, Raised Handle, 10 inches, 2½ inch Cutter.....	Per dozen, \$3 50
No. 52, " " Straight " 10 " 2½ " .....	" 3 50



No. 54.



No. 60.

No. 54, Adjustable, Straight Handle, 10 inches, 2½ inch Cutter.....	Per dozen, \$4 50
No. 60, Double Cutter, Hollow and Straight, 10 inches, 1½ inch Cutter.....	" 4 50

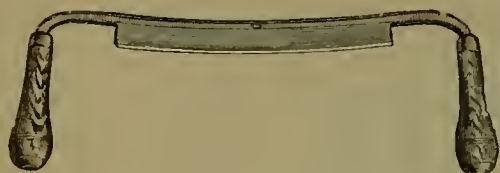
## BORING MACHINES.



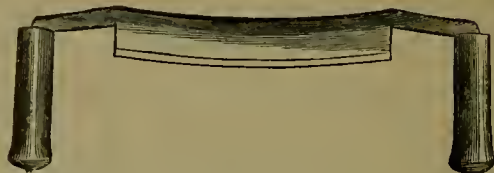
### Phillips'.

Upright, complete, with Augers.....	Each, \$12 00
Angular, " " " .....	" 13 00

## DRAWING KNIVES.



Carpenter's.



Wagon Maker's

Carpenter's.  
COMMON.

1¼ inches wide, Black Walnut Handles, Capped and Ferruled.

Length, inches.....	6	8	10	12	14	16
Per dozen.....	\$16 00	18 00	20 00	22 00	25 00	28 00

## BARTON'S.

1¼ inches wide, Black Walnut Handles, Capped and Ferruled.

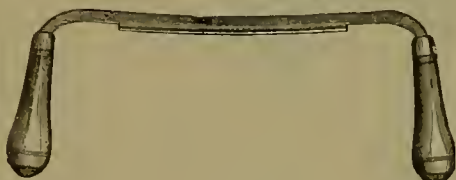
Length, inches.....	6	8	10	12	14	16
Per dozen.....	\$10 00	12 00	14 00	16 00	18 00	20 00

## Wagon Maker's.

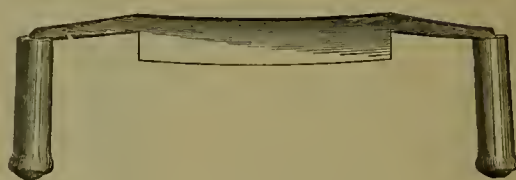
## BARTON'S.

Heavy Blades, 1¼ to 1½ inches wide, Black Walnut Handles, Capped.

Length, inches.....	8	10	12	14
Per dozen.....	\$13 00	15 00	17 00	19 00



Carriage.



Shingle.

## BARTON'S.

## Carriage.

¾ to 1 inch wide, Black Walnut Handles, Capped and Ferruled.

Length, inches.....	6	8	10	12
Per dozen.....	\$10 00	12 00	14 00	16 00

## Coach.

1¼ to 1½ inches wide, Black Walnut Handles, Capped and Ferruled.

Length, inches.....	6	8	10	12
Per dozen.....	\$11 00	13 00	15 00	17 00

## Shingle.

Black Walnut Handles.

Length, inches.....	10	12	14	16
Per dozen.....	\$16 00	18 00	20 00	22 00

## BRACES.



### Ball.

With revolving wood Handle and Head.

No. 25, sweep  $8\frac{1}{2}$  inch. .... Per dozen, \$3 50



### Adjustable Jaw.

With revolving wood Handle and Head.

Nos. ....	117	118	119
Sweep, inches. ....	8	$9\frac{1}{2}$	$10\frac{1}{2}$
Per dozen. ....	\$12 00	13 00	14 00



### Spottford's.

With revolving Iron Head.

Nos. ....	7	8	10	12	14
Sweep, inches. ....	7	8	10	12	14
Per dozen. ....	\$17 00	20 00	23 00	26 00	29 00

## BRACES.

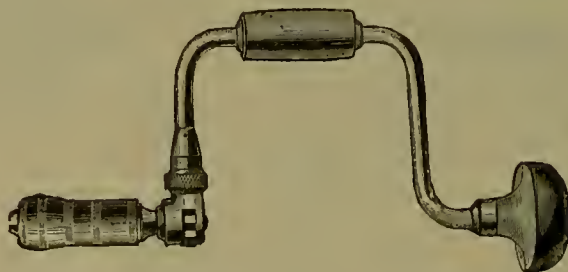
Adjustable.



Nickel Plated, with revolving Rosewood Handle and Lignumvitæ Head.

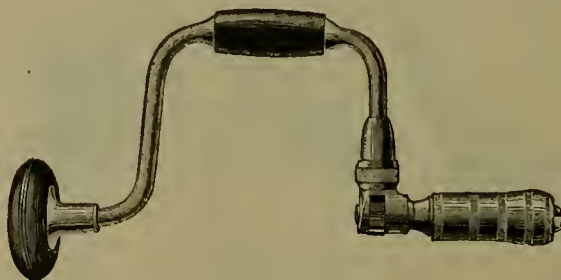
Nos.....	110	111	112	113
Sweep, inches.....	14	12	10	8
Per dozen.....	\$33 00	30 00	27 00	24 00

## Ratchet.



Polished, with revolving Maple-wood Handle and Head.

No. 29, 10½ inch sweep.....	Per dozen, \$26 00
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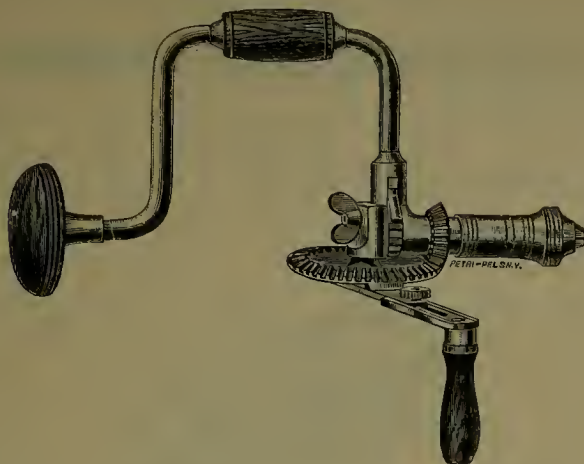


Nickle Plated, with revolving Rosewood Handle and Lignumvitæ Head.

Nos.....	31	32	33
Sweep, inches.....	12	10	8
Per dozen.....	\$39 00	36 00	33 00



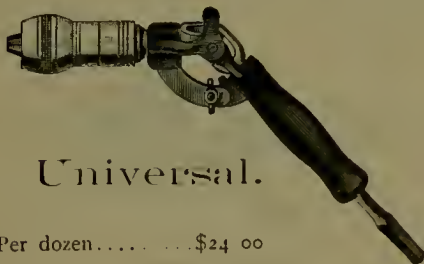
## BRACES.



### Ratchet Brace and Breast Drill.

Nickel Plated, with Revolving Rosewood Handle and Lignumvitæ Head. Will hold Round and Square Shank Drills and Bits.  
Sweep, 10 inches.....Per dozen, \$36 00

## ANGULAR BORERS.



### Universal.

Per dozen.....\$24 00

## EXTENSION BIT HOLDERS.



Nickel Plated.

No. 23, lengths 18, 21, 24 inches.....Per dozen, \$23 00

## MITER BOXES.



### New Langdon.

No. 2, with Saw, inches.....  
Each.....

22x4  
\$9 75

24x4  
10 25



## CAR BITS.



### Cook's.

12 Inch Twist.

Size, 16ths inches.....	4	5	6	7	8	9	10
Per dozen.....	\$6 50	6 50	7 50	9 00	10 25	11 25	12 75
Size, 16ths inches.....	11	12	13	14	15	16	
Per dozen.....	\$13 25	15 50	16 50	17 75	18 75	20 50	
Sets, assorted, 4 to 16-16, 32½ quarters.....	Per set, \$14 00						

### Jenning's.

12 Inch Twist.

Size, 16ths inches.....	4	5	6	7	8	9	10
Per dozen.....	\$6 00	6 80	7 60	8 80	9 60	10 40	11 20
Size, 16ths inches.....	11	12	13	14	15	16	
Per dozen.....	\$12 20	13 20	14 40	15 60	16 80	18 00	
Sets, assorted, 4 to 16-16, 32½ quarters.....	Per set, \$12 50						

## CENTER BITS.



Size, inches. ½	5/8	¾	7/8	1	1 1/8	1 1/4	1 3/8	1 ½	1 5/8	1 ¾	1 7/8	2
Per dozen..\$0 80	80	80	85	90	1 00	1 20	1 40	1 55	1 80	2 05	2 25	2 55

## GIMLET BITS.



### German Pattern.

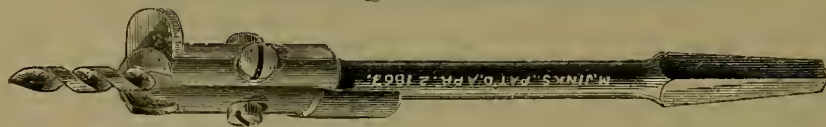
2-32 to 8-32 inches, and assorted..... Per dozen, \$1 25



### Double Cut.

Nos.....	0	1	2	3	4	5	6	Ass'd.
Per dozen.....	\$1 00	1 10	1 25	1 35	1 50	1 60	1 75	1 40

# BITS. Plug Cutter.



Per dozen.....\$

## Pod.



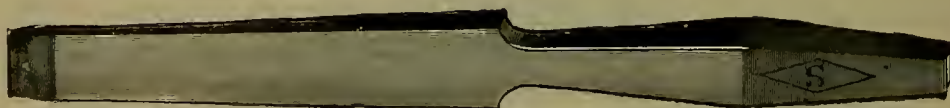
4 to 8-32 inches..... Per dozen, \$1 25

## Screw Driver.



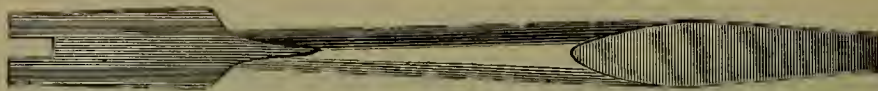
### ROUND.

Assorted..... Per dozen, \$1 50



### FLAT.

Nos.....	1	2	3
Per dozen.....	\$1 40	1 60	1 80



### FORKED.

Assorted..... Per dozen, \$2 00

## Reamer.



### Square.

Per dozen.....\$	Square.	Half Round.	Octagon.
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# COUNTERSINK BITS.



WHEELER'S.

With Gauge..... Per dozen, \$  
Without Gauge..... "



KREB'S.

$\frac{5}{8}$  inches..... Per dozen, \$  
 $\frac{7}{8}$  inches..... "



WOOD

Bright..... Per dozen, \$



FLAT

Bright..... Per dozen, \$



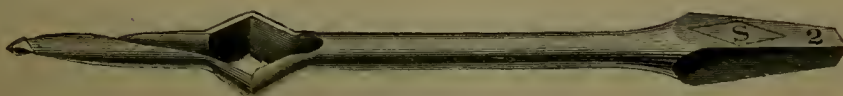
ROSE.

Small, Bright..... Per dozen, \$  
Large, Bright..... "



SNAIL.

Small, Bright..... Per dozen, \$  
Large, Bright..... "

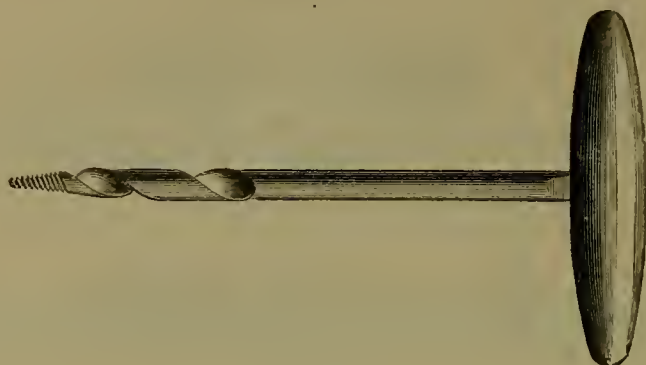


DIAMOND.

Nos .....	0	1	2	3	4
Size, 32ds inches.....	5	6	7	8	9
Bores, inches deep.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$
Per dozen.....	\$				



## GIMLETS.



## Nail.

Flat or Round Metal Head.

Nos. 1, 2, 3 and 4, assorted. . . . . Per gross, \$

## Spike.

Flat or Round Metal Head.

Nos. 1, 2 and 3, assorted. . . . . Per gross, \$

## AUGERS.



## Carpenter's.

Size, inches. . . . .	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$
Per dozen. . . . .	\$5 50	6 50	8 00	8 50	9 50	10 50	11 50	14 00	17 00
Size, inches. . . . .	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4
Per dozen. . . . .	\$20 00	24 00	30 00	35 00	40 00	45 00	50 00	60 00	70 00



## Millwright.

Size, inches. . . . .	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen. . . . .	\$12 00	15 00	18 00	21 00	24 00	26 00	30 00	38 50	42 00	48 00



## Boring Machine.

Size, inches. . . . .	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen. . . . .	\$12 00	14 00	16 00	18 00	22 00

# SHIP AUGERS.



Without Screw.



With Screw.

Size, eighths inches..	3	3½	4	4½	5	5½	6	6½	7
Per dozen.....	\$7 50	7 50	7 50	9 00	9 00	10 50	10 50	12 00	12 00
Size, eighths inches..	7½	8	8½	9	9½	10	10½	11	11½
Per dozen.....	\$13 50	13 50	15 00	15 00	16 50	16 50	18 00	18 00	21 00
Size, eighths inches..	12	12½	13	13½	14	14½	15	15½	16
Per dozen.....	\$21 00	24 00	24 00	25 50	25 50	27 00	27 00	31 50	31 50

# PUMP AUGERS.



Barton's.

Length of Pod 18 to 20 inches; diameter 1¾ to 4 inches..... Per quarter inch, \$

# PUMP RIMMERS.



Barton's.

Taper Pod, diameter 1¾ to 4 inches..... Per quarter inch, \$

# AUGER HANDLES.



Common.

Polished, assorted

Per gross, \$



Patent.

No. 2, in sets of 2, holding any size of Augers..... Per set, \$1 50

# SAWS.

## Hand.



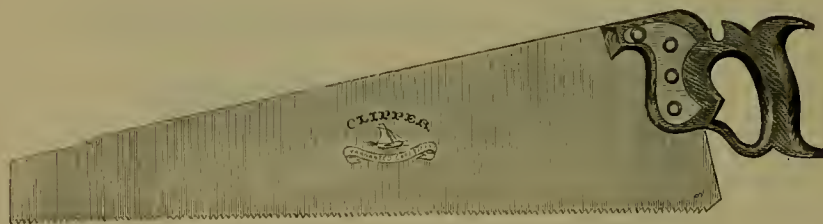
No. 61. Beech Handle, Polished Edge, set and sharpened.

26 inches, 5 to 8 points to the inch . . . . . Per dozen, \$



No. 65. Beech Handle, set and sharpened.

26 inches, 5 to 8 points to the inch . . . . . Per dozen, \$



No. 75. Walnut Handle, Polished Edge, set and sharpened.

26 inches, 5 to 8 points to the inch . . . . . Per dozen, \$



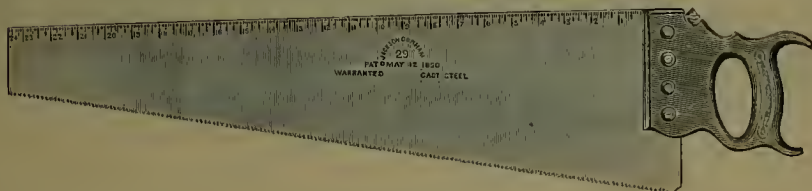
No. 3. Beech Handle, Polished Edge, Grained Blade, Etched.

26 inches, 5 to 8 points to the inch . . . . . Per dozen, \$

One-third dozen in a box.

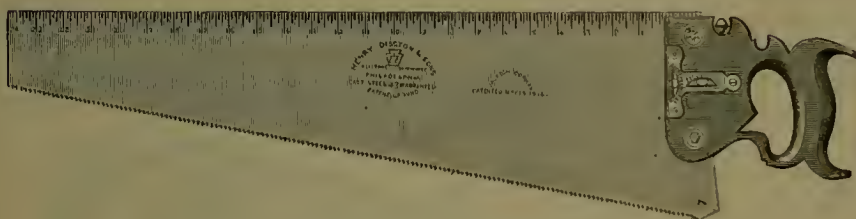
# SAWS.

## Combination Hand.



No. 29 With 24-inch Square and Rule, Straight Edge and Scratch Awl.

26 inches, 6 to 8 points to the inch . . . . . Per dozen, \$12 00



No. 43. With 24-inch Square and Rule, Straight Edge and Scratch Awl, Independent Handle, with Plumb and Level and Gauge attachment. Blade same quality as Disstons' No. 7 Hand Saw.

26 inches, 6 to 9 points to the inch. . . . . Per dozen, \$31 00



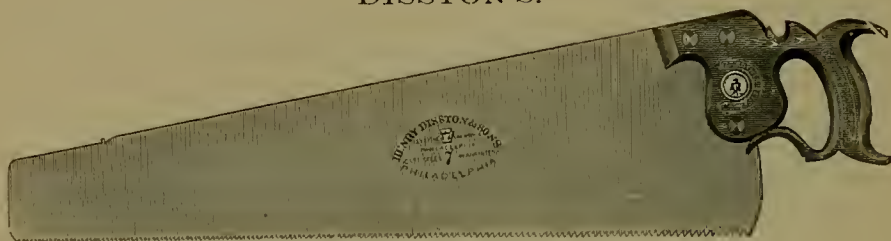
No. 70. Beech Handle, Polished Edge, set and sharpened, 24-inch Etched Rule.

26 inches, 5 to 8 points to the inch. . . . . Per dozen, \$

One-third dozen in a box.

## SAWS.

## DISSTON'S.



No. 7.

## Hand.

No. 7, Cast Steel, warranted, Beech Handle, Polished Edge, Grained Blade and Etched, 4 to 12 points to the inch.

Length of Blade, inches.....	26	28
Per dozen.....	\$20 00	23 50

No. 9, Extra London Spring Steel, warranted, Apple Handle, Polished Edge, Grained Blade and Etched, 5 to 12 points to the inch.

Length of Blade, inches.....	26	28
Per dozen.....	\$25 00	29 00



No. D8, Skew Back, Spring Steel, warranted, Apple Handle, Polished Edge, Grained Blade and Etched, 5 to 12 points to the inch.

Length of Blade, 26 inches.....	Per dozen, \$22 50
---------------------------------	--------------------



No. 12, Extra Refined London Spring Steel, Selected and Highly Polished Blade, Apple Handle, Carved and Polished, 5 to 12 points to the inch.

Length of Blade, inches.....	26	28
Per dozen.....	\$33 00	38 00



# SAWS.



No. 7.

## Panel.

Description of Hand Saws apply to these.

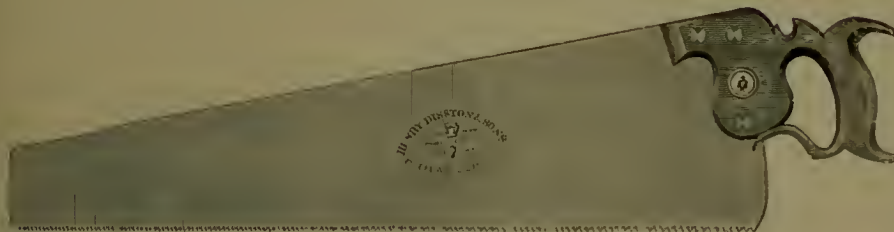
No. 3, Length of Blade, inches.....	14	16	18	20	22	24
Per dozen.....	\$7 00	8 00	9 00	10 25	11 50	12 75
8 to 12 points to the inch.						

No. 7, Length of Blade, inches.....	16	18	20	22	24
Per dozen.....	\$13 00	14 00	16 00	18 00	19 00
6 to 12 points to the inch.					

No. 9, Length of Blade, inches.....	18	20	22	24
Per dozen.....	\$18 00	20 00	22 00	24 00
8 to 12 points to the inch.				

No. 12, Length of Blade, inches.....	18	20	22	24
Per dozen.....	\$25 00	27 00	30 00	32 00
6 to 12 points to the inch.				

One-third dozen in a box



No. 7.

## Rip.

Description of Hand Saws apply to these

No. 7, Length of Blade, inches.....	26	28	30
Per dozen.....	\$20 00	23 50	27 00
4 to 6 points to the inch.			

No. D-8, 28 inches, 4 to 6 points to the inch.....	Per dozen, \$26 00
No. 9, 28 inches, 4 to 6 points to the inch.....	" 29 00
No. 12, 28 inches, 4 to 6 points to the inch.....	" 38 00

One-third dozen in a box.

## SAWS.

DISSTON'S.



## Back.

No. 4, Apple Handle, Polished Edge, Blue Back.

Length of Blade, inches.....	8	10	12	14	16
Per dozen.....	\$13 00	14 00	16 00	18 00	20 00

No. 4, for Mitre Boxes, 4 inches wide under back.

Length of Blade, inches.....	20	22	24
Per dozen.....	\$24 00	26 00	28 00

One third dozen in a box.



## Keyhole Saw and Pad.

Iron Handle.

Per dozen.....	\$2 50
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One dozen in a box.

Keyhole Saw and Pad Blades.....	Per dozen. \$1 25
---------------------------------	-------------------

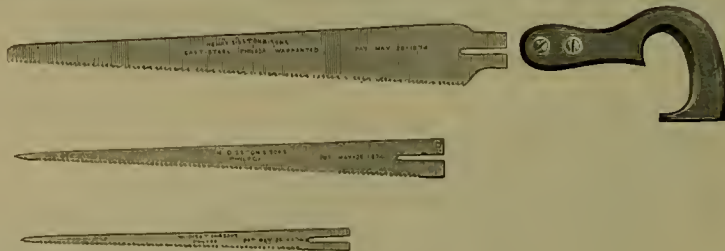


## Compass.

Apple Handle.

Length of Blade, inches.....	10	12	14	16	18
Per dozen.....	\$4 25	4 50	4 75	5 00	5 25

Half dozen in a box.



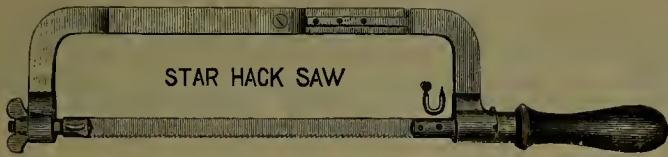
## Nest of Saws.

Combining one each Keyhole, Compass, and Table or Pruning Saw.

Handles and Screws.....	Per dozen, \$2 50
Keyhole Blades.....	" 1 50
Compass Blades, 12 inches long.....	" 3 00
Pruning Blades, 18 inches long.....	" 5 00
Sets complete.....	" 12 00

Two sets in a box.

HACK SAWS.



Extension Steel Frame, to hold different lengths of Blades.

No. 1, Polished and Nickel Plated. . . . . Per dozen, \$9 60

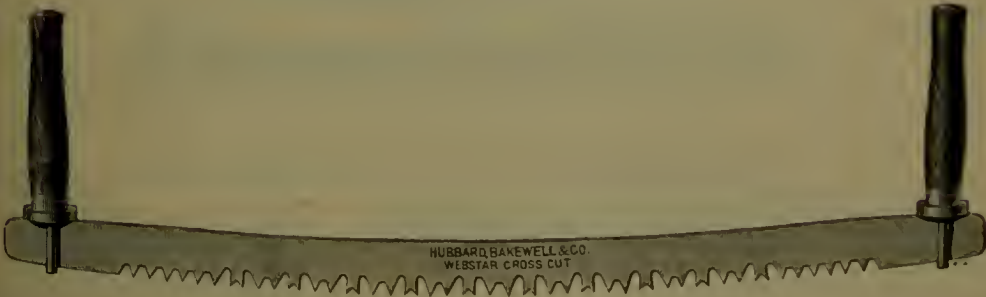


Disston's, length of Blade, inches. . . . .	10	12
Per dozen . . . . .	\$14 25	15 25
Stubbs', length of Blade, inches. . . . .	10	12
Each . . . . .	\$	14

HACK SAW BLADES.

Length, inches. . . . .	8	9	10	12	14
Star . . . . . Per dozen, \$					
Disston's . . . . .	"				
Stubbs' . . . . .	"				

CROSS-CUT SAWS.



Webstar Patent, Champion Tooth.

Complete, with Champion Grip Handles.

Length, feet. . . . .	6	6 1/2	7	7 1/2
Each . . . . .	\$2 60	2 80	3 00	3 20

## CROSS-CUT SAWS.



## V Tooth.

Two Men; Unhandled.

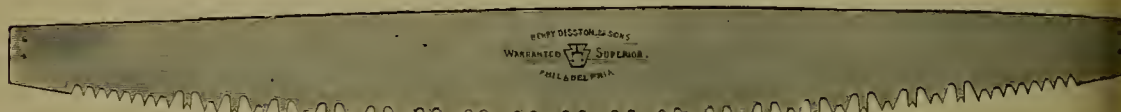
Length, feet,  $4\frac{1}{2}$ , 5,  $5\frac{1}{2}$  and 6..... Per foot, \$

## Tuttle Tooth.

One Man; Unhandled.

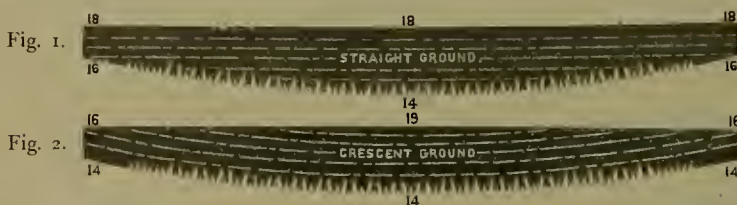
Length, feet, 5,  $5\frac{1}{2}$ , 6,  $6\frac{1}{2}$ , 7 and  $7\frac{1}{2}$ ..... Per foot, \$

Two Men; Unhandled.

Length, feet, 5,  $5\frac{1}{2}$ , 6,  $6\frac{1}{2}$ , 7,  $7\frac{1}{2}$ , 8,  $8\frac{1}{2}$  and 9..... Per foot, \$

## Champion Tooth.

Two Men; Unhandled.

Length, feet, 5,  $5\frac{1}{2}$ , 6,  $6\frac{1}{2}$ , 7,  $7\frac{1}{2}$ , 8,  $8\frac{1}{2}$  and 9... .. Per foot, \$

## Simonds' "Crescent Ground."

Two men; Unhandled.

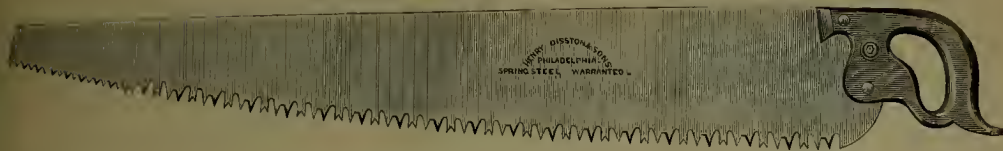
Length, feet.....	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6
Each.....	\$2 40	2 90	3 50	4 10	4 80

Cross-cut Saws have heretofore been ground in a straight line, from end to end, as shown by broken lines in Fig. 1. As a result, a saw made 14 gauge thick at the center of the edge of the saw, and beveled to 18 gauge at the back, will be but 16 gauge thick at the edge, near the end of the saw; or, in other words, THE TEETH VARY TWO GAUGES IN THICKNESS ON THE EDGE OF SAW, as shown in diagram.

The improvement consists in grinding the saw in crescent lines, parallel or substantially parallel to the cutting edge, as shown in Fig. 2, in which case THE EDGE OR TEETH ARE OF EVEN THICKNESS, while the inequality is thrown into the back, and the thickness of the saw remaining the same across its center as when ground the old way, THE ENDS ARE INCREASED TWO GAUGES IN THICKNESS.



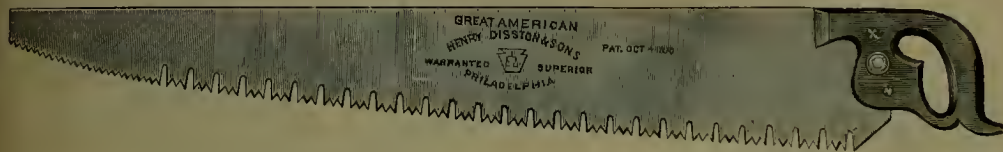
## CROSS-CUT SAWS.



### Champion.

One Man; Handled.

Length, feet.....	3	3½	4	4½	5	5½	6
Each.....	\$2 35	2 60	3 15	3 50	3 85	4 25	4 65



### Great American.

One Man; Handled.

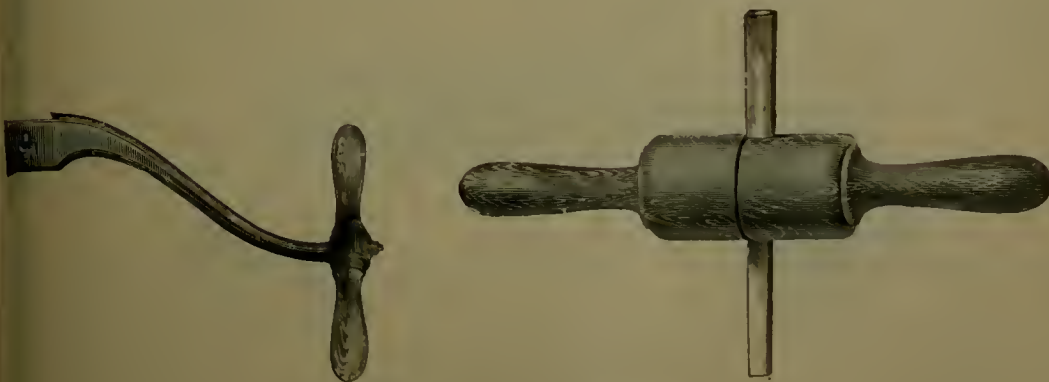
Length, feet.....	3	3½	4	4½	5	5½	6
Each.....	\$2 75	3 00	3 50	4 00	4 50	5 00	5 50

## PIT SAWS.



Length, feet.....	5½	6	6½	7	7½
Each.....	\$5 50	6 00	6 50	7 00	7 50

## TILLERS AND BOXES.

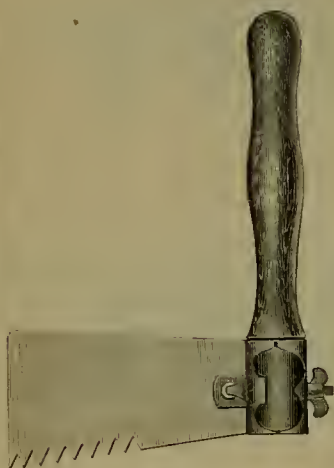


### For Pit Saws.

Tillers.....	Each, \$1 25	Boxes.....	Each, \$1 00
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## SAW HANDLES.



Climax.



No. 5.



One Man and Supplementary.

## Cross-cut.

Climax.....	Per pair, \$
No. 5.....	"
One Man.....	Per dozen, \$
Supplementary (for one man saws).....	"



## Hand.

Size, inches.....	16 and 18	20 and 22	24 and 26	28
No. 2.....	Per dozen, \$			
No. 3.....	"			
No. 7.....	"			
No. 12.....	"			
Butcher.....			Per dozen, \$	
Compass.....			"	

## SAW SCREWS.



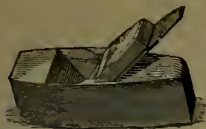
Nos. 3 and 4.



Nos. 1 and 2.

No. 1, Brass Flush.....	Per gross, \$	1 75
No. 2, ".....	"	2 25
No. 3, Small Eagle.....	"	4 50
No. 4, Large Eagle.....	"	5 25
No. 5, Brass Raised.....	"	5 00

## PLANES.



Smooth.



Handled Smooth.

### Smooth.

COMMON.

Double Irons,  $1\frac{3}{4}$ , 2 and  $2\frac{1}{4}$  inches wide..... Each, \$0 90

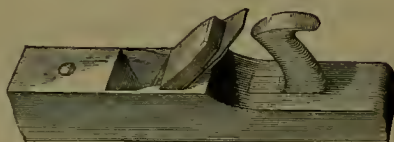
BARTON'S.

Double Irons,  $1\frac{3}{4}$ , 2 and  $2\frac{1}{4}$  inches wide..... Each, \$0 90

Double Irons, Solid Handle..... " 1 75



Regular.



Razee.

### Jack.

COMMON.

Double Irons, 2,  $2\frac{1}{8}$  and  $2\frac{1}{4}$  inches wide..... Each, \$1 00

Regular.

Razee.

1 20

BARTON'S.

Double Irons, 2,  $2\frac{1}{8}$  and  $2\frac{1}{4}$  inches wide..... Each, \$1 00

Regular.

Razee.

1 20



### Fore.

COMMON

Double Irons,  $2\frac{3}{8}$ ,  $2\frac{1}{2}$  and  $2\frac{5}{8}$  inches wide..... Each, \$1 40

Regular.

Razee.

1 60

BARTON'S.

Double Irons,  $2\frac{3}{8}$ ,  $2\frac{1}{2}$  and  $2\frac{5}{8}$  inches wide..... Each, \$1 40

Regular.

Razee.

1 60



### Jointer.

COMMON

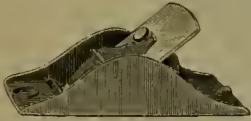
Double Irons, $2\frac{1}{2}$ , $2\frac{5}{8}$ and $2\frac{3}{4}$ inches wide.	Length, inches	26	28	30
Regular	Each,	\$1 50	1 60	1 75
Razee	"	1 70		

BARTON'S.

Double Irons, $2\frac{1}{2}$ , $2\frac{5}{8}$ and $2\frac{3}{4}$ inches wide.	Length, inches	26	28	30
Regular	Each,	\$1 50	1 60	1 75
Razee	"	1 70		

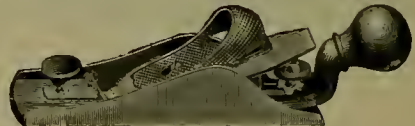
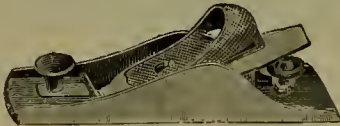
# PLANES.

## BAILEY'S.

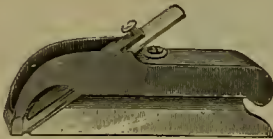


Iron.

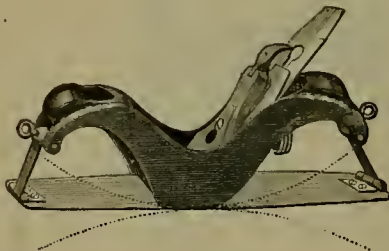
No. 101, Block, $3\frac{1}{2}$ inches long, Cutter 1 inch wide.....	Each, \$o	20
No. 103, Adjustable Block, $5\frac{1}{2}$ inches long, Cutter $1\frac{1}{4}$ inches wide.....	"	60
No. 110, Block, $7\frac{1}{2}$ inches long, Cutter $1\frac{3}{4}$ inches wide.....	"	60
No. 120, Adjustable Block, $7\frac{1}{2}$ inches long, Cutter $1\frac{3}{4}$ inches wide.....	"	60



No.	9½	Excelsior Block,	6 inches long,	Cutter 1¾ inches wide	Each,	\$1 50
No.	15	"	7	" 1¾	"	1 60
No.	9¾	"	6	Rosewood Handle, Cutter 1¾ inches wide	"	1 75
No.	15½	"	7	" 1¾	"	1 85



No. 75, Bull Nose Rabbet, Iron Stock, 4 inches long, Cutter 1 inch wide	Each, \$0	50
No. 90, Skew Rabbet, Steel Case, 9 inches long, Cutter 1½ inch wide, with Spur	"	1 25
No. 10, Carriage Maker's Rabbet, 14 " " 2½ " "	"	4 50



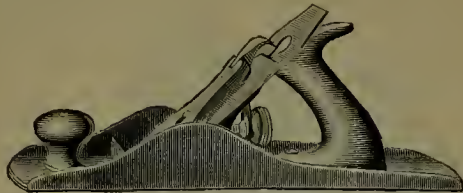
No. 13, Adjustable Circular, Cutter $1\frac{3}{4}$ inches wide.....	Each, \$4 00
No. 113, " " " $1\frac{3}{4}$ " .....	" 4 00

# PLANES.

BAILEY'S.



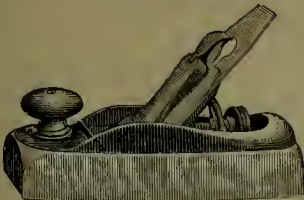
Nos. 1 to 4.



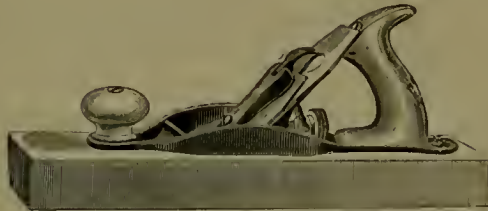
Nos. 5 to 8.

## Iron.

No. 1, Smooth,	5 1/2	inches long,	Cutter	1 1/4	inches wide.	Each, \$2	25
No. 2, " 7	"	"	"	1 5/8	"	"	2 75
No. 3, " 8	"	"	"	1 3/4	"	"	3 00
No. 4, " 9	"	"	"	2	"	"	3 25
No. 5, Jack, 14	"	"	"	2	"	"	3 75
No. 6, Fore, 18	"	"	"	2 3/8	"	"	4 75
No. 7, Jointer, 22	"	"	"	2 3/8	"	"	5 50
No. 8, " 24	"	"	"	2 5/8	"	"	6 50



Nos. 21 to 24.



Nos. 26 to 33.

## Wood Bottoms.

No. 21, Smooth,	7	inches long,	Cutter	1 3/4	inches wide.	Each, \$2	00
No. 22, " 8	"	"	"	1 3/4	"	"	2 00
No. 23, " 9	"	"	"	1 3/4	"	"	2 00
No. 24, " 8	"	"	"	2	"	"	2 00
No. 26, Jack, 15	"	"	"	2	"	"	2 25
No. 27, " 15	"	"	"	2 1/8	"	"	2 50
No. 28, Fore, 18	"	"	"	2 3/8	"	"	2 75
No. 29, " 20	"	"	"	2 3/8	"	"	2 75
No. 30, Jointer, 22	"	"	"	2 3/8	"	"	3 00
No. 31, " 24	"	"	"	2 3/8	"	"	3 00
No. 32, " 26	"	"	"	2 5/8	"	"	3 25
No. 33, " 28	"	"	"	2 5/8	"	"	3 25



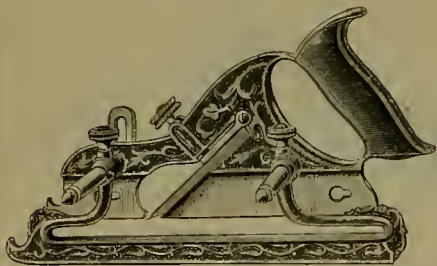
Nos. 35 and 36.

No. 35, Handled Smooth,	9	inches long,	Cutter	2	inches wide.	Each, \$2	50
No. 36, " " 10	"	"	"	2 3/8	"	"	2 75

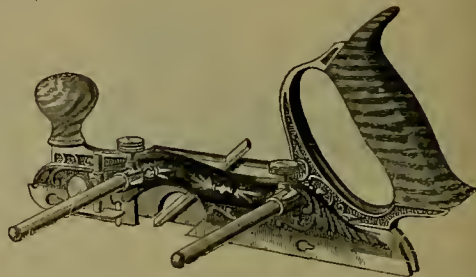


## IRON PLANES.

BAILEY'S.



Nos. 41 to 44.



Nos. 46 and 47.

## Miller's Patent.

Combined Plow, Filletster and Matching Plane.

Including  $\frac{1}{8}$  to  $\frac{5}{8}$  inch (eight) Plow Bits, Tonguing and Grooving Tools.

No. 41, Iron Stock and Fence.....	Each, \$9 00
No. 42, Gun Metal Stock and Fence.....	" 12 00

Combined Plow and Matching Plane.

Including  $\frac{1}{8}$  to  $\frac{5}{8}$  inch (eight) Plow Bits, Tonguing and Grooving Tools.

No. 43, Iron Stock and Fence.....	Each, \$7 00
No. 44, Gun Metal Stock and Fence.....	" 10 00

## Traut's Patent.

Adjustable Dado, Filletster, Plow, Etc.

Including 3-16 to  $1\frac{1}{4}$  inch (eight) Plow Bits, Tonguing and Grooving Tools.

No. 46, Iron Stock and Fence.....	Each, \$7 00
-----------------------------------	--------------

Adjustable Dado.

Including Bits,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{7}{8}$  and  $1\frac{1}{4}$  inch.

No. 47, Iron Stock and Fence.....	Each, \$4 00
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Tonguing and Grooving.

Including Tonguing and Grooving Tools.



No. 48, Iron Stock and Fence, for $\frac{3}{4}$ to $1\frac{1}{4}$ inch Boards.....	Each, \$2 50
--	--------------

## PLANE IRONS.

BAILEY'S.

Width, inches.....	$1\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{3}{4}$	2	$2\frac{1}{8}$	$2\frac{3}{8}$	$2\frac{5}{8}$
Single, each.....	\$0 20	25	28	30	33	37	40
Double, each.....	40	45	50	55	60	65	70

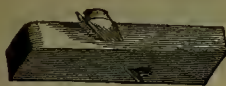
Orders for Double Irons should state whether for Iron or Wood Bottom Planes.

BARTON'S.

Width, inches.....	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$	3	4	$4\frac{1}{2}$
Single, per dozen.....	\$2 75	2 75	3 15	3 45	3 70	4 10	4 50	4 90	5 50	7 00		
Double, ".....	5 00	6 25	6 45	6 65	7 00	7 40	8 20	9 00	10 15	11 70		



## PLANES.



No. 146.



No. 149.

### Rabbet.

No. 146, Inches.....	$\frac{1}{2}$ to 1	$1\frac{1}{8}$ to $1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Each.....	\$0 60	65	70	80	90
No. 149, With Handle and two Cutters, $1\frac{1}{4}$ to 2 inches.....	Each, \$1 70				



Hollow.



Round.

### Hollow and Round.

No. 92.....	2 to 12	13 to 18	19 to 24
Per pair.....	\$0 75	90	1 10
Half sets of 9 (2 to 18).....	Each, \$7 20		



No. 100.



No. 102.

### Match.

No. 100, Board, Separate Plated, $\frac{1}{2}$ to 1 inch.....	Per pair, \$1 50
No. 102, Board, with Solid Handles, Plated, $\frac{1}{2}$ to 1 inch.....	" 2 25



No. 119.

### Panel Plows.

No. 119, Beech, Screw Stop, with Handle.....	Each, \$5 50
No. 120, " " Boxwood Fence, with Handle.....	" 5 85
No. 123, " Boxwood Arms, with Handle.....	" 6 75
No. 124, " " " Boxwood Fence.....	" 7 00

## PLANES.



Single Bead.



Center Bead.



## Bead.

No. 47, Single, boxed, $\frac{1}{8}$ to $\frac{1}{2}$ inch. ....	Each, \$0 50
No. 51, Center, double, boxed, $\frac{1}{8}$ to $\frac{1}{2}$ inch. ....	" 60



Filletster.



Dado.



## Filletster.

No. 66, With Cutter .....	Each, \$1 25
No. 67, " and Brass Side Stop .....	" 1 40
No. 68, " " and Boxed .....	" 1 85
No. 69, " Brass Screw Stop and Boxed .....	" 2 50
No. 71, " Boxwood Screw Arms, Brass Screw Stop and Boxed .....	" 4 00

## Dado.

No. 62, Screw Stop, $\frac{1}{4}$ to 1 inch .....	Each, \$1 50
---	--------------



Cove.



Quarter Round.



## Cove.

No. 53, $\frac{3}{4}$ inch .....	Each, \$0 50
No. 53, $\frac{7}{8}$ and 1 inch .....	" 65

## Scotia.

No. 54, With two Fillets, $\frac{3}{4}$ to 1 inch .....	Each, \$0 65
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## Quarter Round.

No. 54 $\frac{1}{2}$ , To work on edge of board, $\frac{3}{4}$ to 1 inch .....	Each, \$0 65
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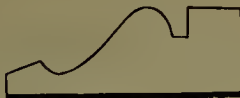
## Tooth.

No. 36. ....	Each, \$1 00
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## PLANES.



Grecian Ogee and Bead.



Grecian Ogee and Bevel.



Roman Reverse Ogee.

### Grecian Ogee.

No. 77, $\frac{5}{8}$ to 1 inch.	Each, \$0 75
No. 77, $1\frac{1}{4}$ to $1\frac{1}{2}$ inch.	" 90

### Grecian Ogee and Bead.

No. 78, $\frac{5}{8}$ to $1\frac{1}{4}$ inch.	Each, \$0 90
No. 78, $1\frac{1}{2}$ inch.	" 1 05

### Grecian Ogee and Bevel.

No. 79, $\frac{5}{8}$ to 1 inch.	Each, \$0 90
No. 79, $1\frac{1}{4}$ to $1\frac{1}{2}$ inch.	" 1 05



### Table.

No. 177, With Fence, $\frac{1}{4}$ to $\frac{5}{8}$ inch	Per pair, \$1 40
--	------------------

### Nosing.

No. 113, Two Irons, $\frac{7}{8}$ to $1\frac{1}{4}$ inch.	Each, \$1 10
No. 113, " " $1\frac{3}{8}$ to $1\frac{1}{2}$ "	" 1 20
No. 114, " " with handle, 1 to $1\frac{1}{4}$ inch.	" 1 50
No. 114, " " " $1\frac{1}{2}$ "	" 1 75

### Sash.

No. 166, Screw Arms, Self Regulating, Boxed, Bevel or Ovolo.	" 2 00
--	--------

## PLANE HANDLES.



Jack.



Fore or Jointer.

Jack	Per dozen, \$
Fore or Jointer.	"
For Bailey's Iron and Wood Bottom Planes.	"

## CHISELS.



Tang Firmer.

Solid Cast Steel.

Width, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen.....\$												
Assorted, $\frac{1}{8}$ to 2 inches, 12 in a set.....												Per set, \$



Socket Firmer.

COMMON.

Solid Cast Steel, 6½ inch Blades.

Width, inches..	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen.....	\$8 00	8 00	8 00	9 00	10 00	11 00	11 00	12 00	13 00	14 00	15 00	16 00
Assorted, $\frac{1}{8}$ to 2 inches, 12 in a set.....	Per set, \$11 25											

BARTON'S.

Solid Cast Steel, 6½ inch Blades, Apple-tree Handles.

Width, inches...	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen.....	\$4 00	4 30	4 60	5 00	5 50	6 00	6 40	6 80	7 50	8 00	9 00	10 00
Assorted, $\frac{1}{8}$ to 2 inches, 12 in a set.....	Per set, \$6 00											

## Coach Makers' Socket Firmer.

BARTON'S.

Solid Cast Steel, 7 inch Heavy Blades, Hickory Handles.

Width, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen.....	\$6 75	7 20	7 50	8 00	8 50	9 00	9 75	10 50	11 25	12 00	13 00	14 00
Assorted, $\frac{1}{8}$ to 2 inches, 12 in a set.....	Per set, \$9 50											

Long Paring Socket Firmer.

BARTON'S.

Solid Cast Steel, 8 inch Light Blades, Apple-tree Handles, for Pattern Makers' use.

Width, inches.....	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2
Per dozen.....	\$6 75	7 20	7 50	8 00	8 50	9 00	9 75	10 50	11 25	12 00	13 00	14 00
Assorted, 1/8 to 2 inch, 12 in a set.....	Per set, \$9 50											

## Millwrights' Socket Firmer.

BARTON'S.

**Solid Cast Steel, 8 inch Heavy Blades, Hickory Handles.**

Width, inches...	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen.....	\$9 00	9 00	9 50	10 00	10 50	11 00	11 50	12 00	13 50	15 50	18 00	21 00
Assorted, $\frac{1}{8}$ to 2 inch, 12 in a set.....	Per set, \$12 50											



Turning.

BARTON'S.

Solid Cast Steel, 12 inches full length.

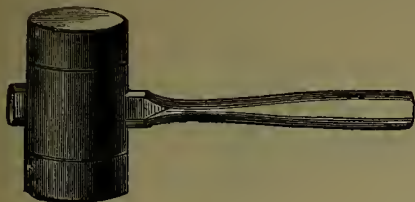
Width, inches..	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$
Per dozen.....	\$3 00	3 00	3 20	3 45	3 75	4 10	4 50	5 10	6 20	7 70	9 20	10 70	12 20	13 70
Handled, extra.....	Per dozen, \$1 25													



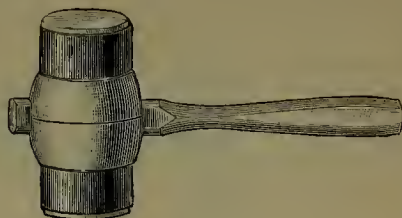




## MALLETS.



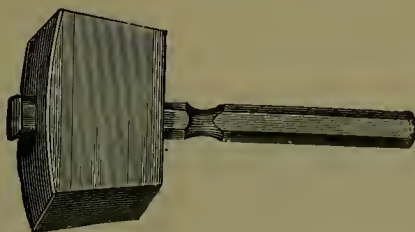
Nos. 2 to 7.



No. 14.

### Round.

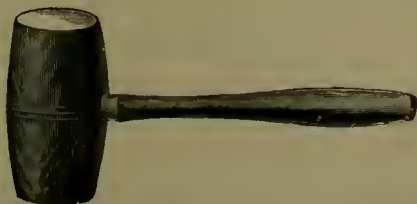
No. 2, Hickory, Mortised, 5½ inches long, 3½ inches diameter.....	Per dozen, \$2 00
No. 3, " " 6 " 4 " .....	" 2 50
No. 6, Lignumvitæ, " 5½ " 3½ " .....	" 4 00
No. 7, " " 6 " 4 " .....	" 5 00
No. 14, Mortised, Iron Rings, 6 inches long, 4 inches diameter.....	" 5 50



Nos. 9 to 13.

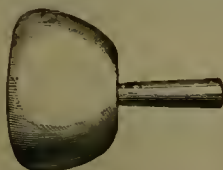
### Square.

No. 9, Hickory, Mortised, 6½ inches long, 2¾x3¾ inches.....	Per dozen, \$2 50
No. 10, " " 7 " 3x4 " .....	" 3 00
No. 12, Lignumvitæ, " 6½ " 2¾x3¾ " .....	" 4 75
No. 13, " " 7 " 3x4 " .....	" 5 75



### 'Tinner's'.

No. 4, Round, Hickory, 5½ inches long, 2¼ and 2½ inches diameter. ....	Per dozen, \$1 00
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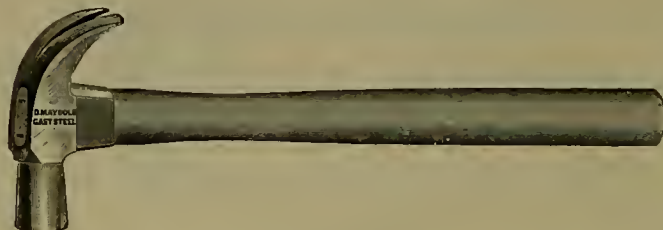


### Stone Cutters'.

Selected Knots, 6 to 7½ lbs. each.....	Per dozen, \$
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## HAMMERS.

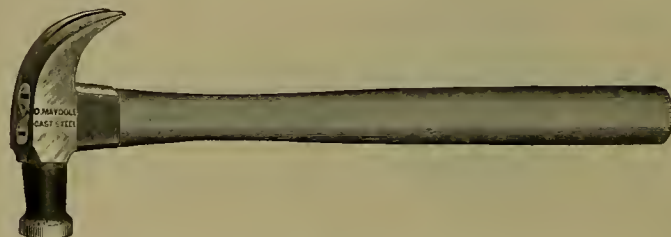
MAYDOLE'S.



## Adze-eye.

Solid Cast Steel.

Nos.....	1	1½	2	3
Weight (not including handle).....	1 lb. 4 oz.	1 lb.	13 oz.	7½ oz.
Per dozen.....	\$8 00	7 00	6 00	5 00



## Adze-eye Bell Face.

Solid Cast Steel.

Nos.....	11	11½	12	13
Weight (not including handle).....	1 lb. 3 oz.	1 lb.	12 oz.	7 oz.
Per dozen.....	\$8 00	7 00	6 00	5 00

BROWN'S.

## Adze-eye and Adze-eye Bell Face.

Same sizes and lists as above.



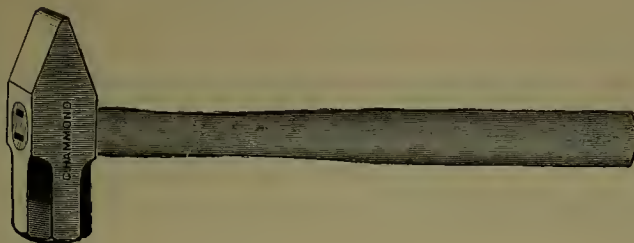
## Adze-eye.

Malleable, Extra Finish.

Nos.....	10	20
Per dozen.....	\$4 00	4 50

Half dozen in a box.

# HAMMERS.

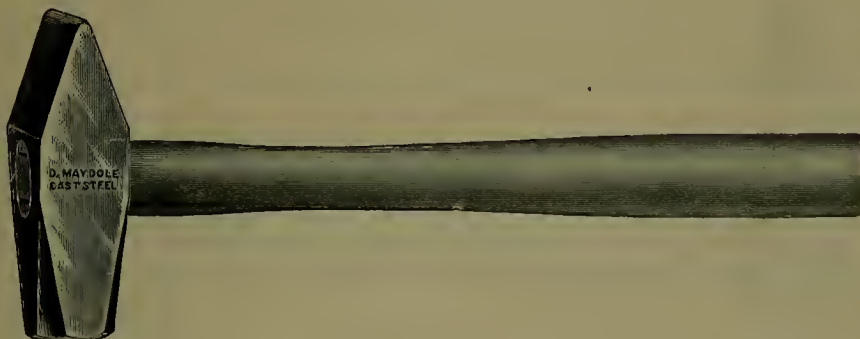


## Engineers'.

Solid Cast Steel.

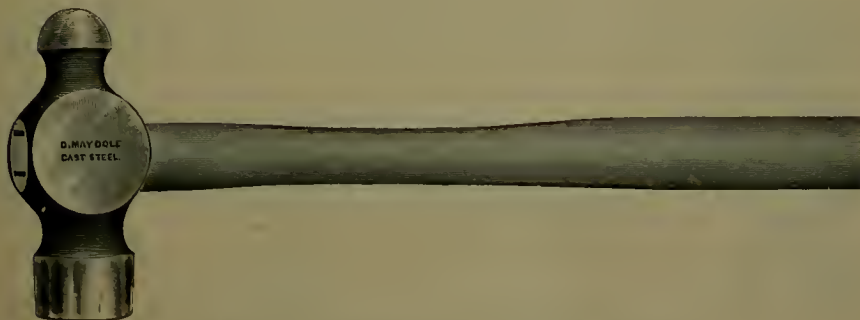
Nos.....	1	2	3	4
Weight, including handle.....	2 lbs.	2 lbs. 9 ozs.	3 lbs.	4 lbs.
Per dozen.....	\$9 00	11 00	13 00	15 00

Half dozen in a box.



Nos.....	91	92
Weight (not including handle).....	2 lbs. 4 ozs.	1 lb. 12 ozs.
Per dozen.....	\$10 00	9 00

Third dozen in a box.



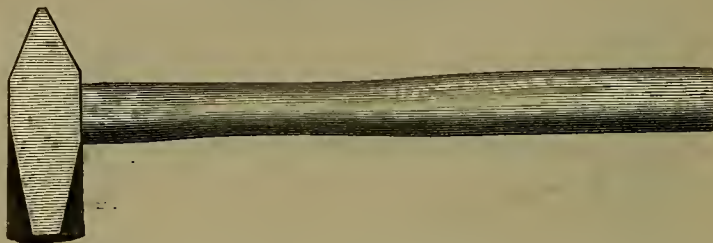
## Machinists' Ball Pein.

Solid Cast Steel.

Nos.....	70	70 1/2	71	72	73	74	75	76	77
Weight (not inc. handle)	3 lbs.	2 lbs. 4 ozs.	1 lb. 14 ozs.	1 lb. 8 ozs.	1 lb. 4 ozs.	1 lb.	12 ozs.	10 ozs.	7 ozs.
Per dozen.....	\$16 00	14 00	13 00	12 00	11 00	10 00	9 00	8 00	7 00

Third dozen in a box.

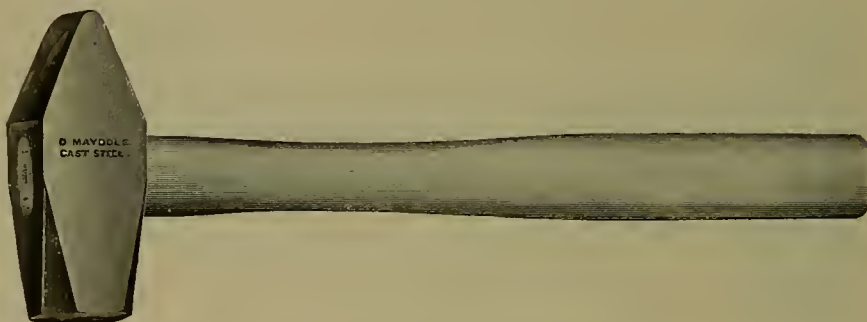
## HAMMERS.



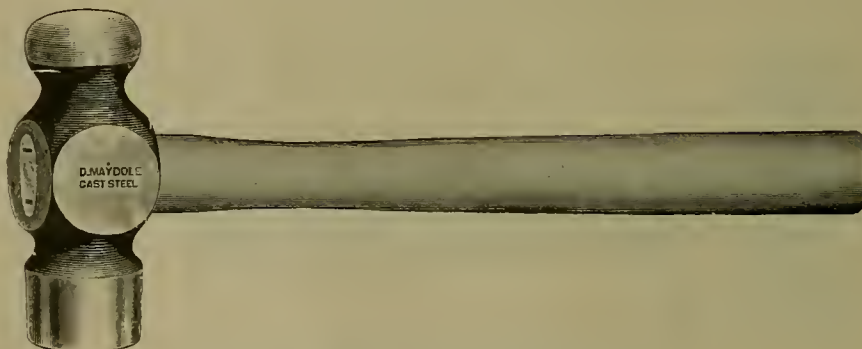
## Blacksmiths' Hand.

Solid Cast Steel.

Nos.....	1	2	3
Weight (not including handle).....	2 lb. 6 oz.	3 lb.	3 lb. 8 oz.
Per dozen.....	\$12 00	13 50	16 00



Nos.....	61	62	65, Shoulder pein.
Weight (not including handle).....	3 lbs.	2 lbs, 10 oz.	2 lbs. 14 oz.
Per dozen.....	\$12 00	11 00	12 00



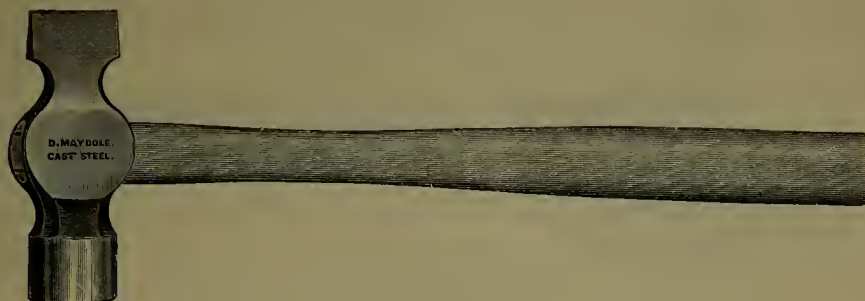
## Carriage Ironers.

Solid Cast Steel.

Nos.....	111	112
Weight (not including handle).....	2 lbs. 12 ozs.	2 lbs, 6 ozs.
Per dozen.....	\$14 00	13 00



## HAMMERS.

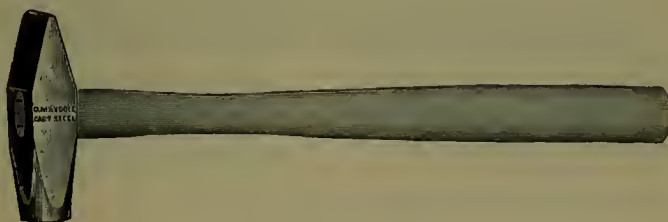


### Machinists' Chipping.

Solid Cast Steel.

Nos .....	100	101	102	103
Weight (not including handle).....	1 lb. 12 ozs.	1 lb. 6 ozs.	1 lb. 2 ozs.	12 ozs.
Per dozen.....	\$12 00	11 00	10 00	9 00

Third dozen in a box.



### Riveting.

Solid Cast Steel.

Nos .....	40	41	42	43	44
Weight (not including handle).....	1 lb. 8 ozs.	1 lb. 2 ozs.	13 ozs.	7 ozs.	4 ozs.
Per dozen.....	\$6 00	5 00	4 25	3 50	3 00

Half dozen in a box.

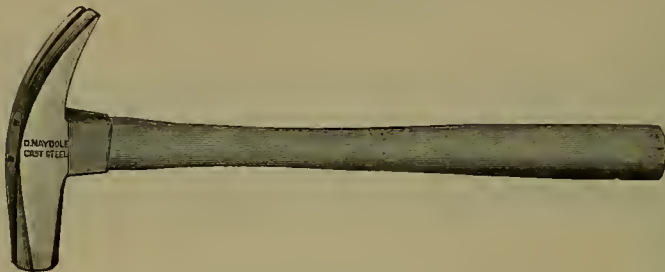


### Shoemakers'.

Solid Cast Steel.

Nos.....	2	3
Weight (not including handle).....	1 lb.	1 lb. 2 ozs.
Per dozen.....	\$5 00	5 50

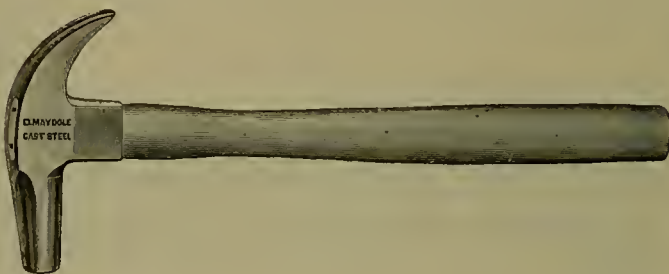
## HAMMERS.



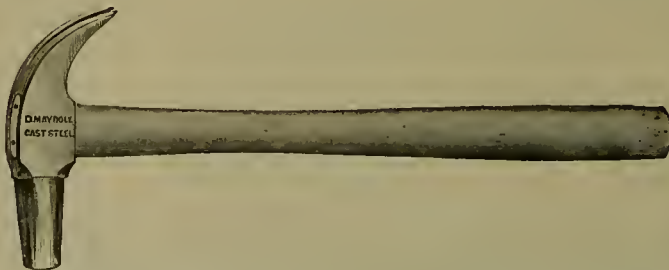
## Farrier's.

Solid Cast Steel.

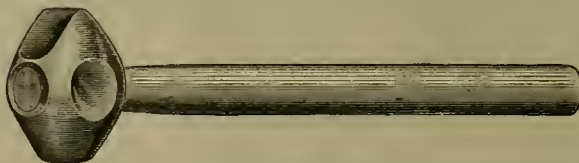
No. 51, Adze-eye, Boston Pattern, Weight (unhandled) 10 ounces..... Per dozen, \$6 00  
 California Pattern, Unpolished (similar to No. 51), Weight 13 ounces..... " 9 00



No. 52, Adze-eye, Weight (unhandled) 8 ounces..... Per dozen, \$5 00



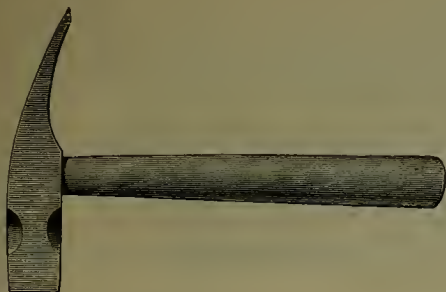
No. 55, Plain, Weight (unhandled) 7 ounces..... Per dozen, \$3 50



## Shoe Turning.

California Pattern, Unpolished, Unhandled, Weight 2 to 3 lbs..... Each, \$

# HAMMERS.



Brick.



Napping.

## Brick.

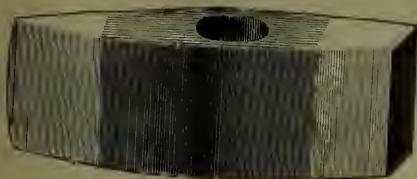
Solid Cast Steel.

Polished Face, Handled.....Per dozen, \$

## Napping.

Solid Cast Steel.

Polished Face, Unhandled, 4 and 4½ lbs. each.....Per lb., \$



Masons' Hammers.



Stone Axes.

## Masons'.

Solid Cast Steel.

Polished Face, Unhandled, 4 to 12 lbs. each.....Per lb., \$

## Stone Axes.

Solid Cast Steel.

Polished and Handled, 4 to 12 lbs. each.....Per lb., \$



## Hand Drilling Hammers.

Solid Cast Steel.

Polished Face and Handled, 3 to 4½ lbs. each.....Per lb., \$

# SLEDGES.

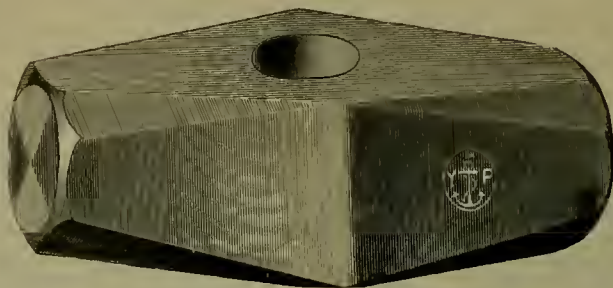


Cross Pein.

## Blacksmiths'.

Solid Cast Steel.

Polished Face, Unhandled, Cross or Straight Pein, 8 to 16 lbs. each..... Per lb., \$



## Nevada Pattern.

Double Face.

Polished Face, Handled, 4½ to 16 lbs. each..... Per lb., \$



## Wood-Choppers'.

Truckee Pattern.

Polished Face, Unhandled, 8 to 14 lbs. each..... Per lb., \$

# WEDGES.



Truckee Pattern



Falling.

## Truckee Pattern.

Iron, 4 to 9 lbs. each..... Per lb., \$  
Steel, 3 to 12 "..... "

## Falling.

Steel, 4 to 8 lbs. each..... Per lb., \$

# MAULS.



## Ship or Top.

Solid Cast Steel.

Polished Face, Unhandled,  $4\frac{1}{2}$  to  $5\frac{1}{2}$  lbs. each..... Per lb., \$

Half dozen in a box.



## Railroad Spike.

Solid Cast Steel.

Polished Face, Unhandled..... Per lb., \$

# RAILROAD TRACK CHISEL.



Solid Cast Steel, Unpolished..... Per lb., \$

# NUT LOCKS.

VARONA.

For  $\frac{5}{8}$  inch Bolt..... Per M, \$

For  $\frac{3}{4}$  inch Bolt..... "



## AXES.



## Chopping.

MILLER'S.

With 36 inch Handles; Assorted, in Cases.

3½ to 4½ and 4 to 5 lbs.....	Per dozen, \$
------------------------------	---------------

HURD'S

With 36 inch Handles; Assorted, in Cases.

3 to 4, 3½ to 4, and 3½ to 4½ lbs.....	Per dozen, \$
4 to 5, and 4½ to 5½ lbs.....	"
4½ to 6 lbs.....	"
5 to 6, and 5 to 7 lbs.....	"
7 lbs.....	"
8 lbs.....	"

HUNT'S.

With 36 inch Handles; Assorted, in Cases.

3 to 4, 3½ to 4, and 3½ to 4½ lbs.....	Per dozen, \$
4 to 5, and 4½ to 5½ lbs.....	"
4½ to 6 lbs.....	"
5 to 7 lbs.....	"
7 lbs.....	"



## Double Bitted.

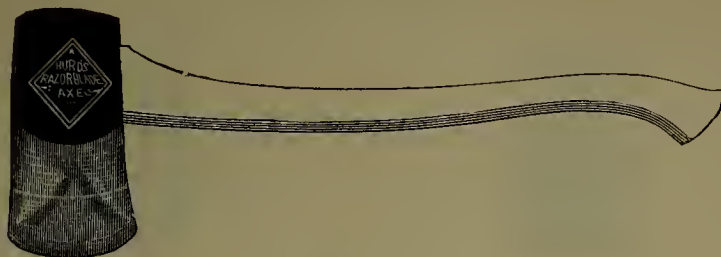
HURD'S.

Without Handles, ¾ to ¾, ¾ to 4, and 3½ to 4½.....	Per dozen, \$
--	---------------

HUNT'S.

Without Handles, ¾ to ¾, ¾ to 4, and 3½ to 4½.....	Per dozen, \$
--	---------------

# AXES.



## Boys'.

With 28-inch Handles.

Miller's ..... Per dozen, \$  
Hurd's ..... "

Hunt's, No. 1 ..... Per dozen, \$  
Hunt's, No. 2 ..... "



## Broad.

Pittsburg Pattern.

Hurd's, 11 to 13 inch cut, 5½ to 7½ lbs each ..... Per dozen, \$  
Hunt's, 11 to 13 " 6 to 8½ " .....

# ADZES.



Half Head.



Full Head.



Ship.

Hurd's Half and Full Head ..... Per dozen, \$24 00  
Hurd's Ship ..... " 25 00  
Hunt's Half and Full Head and Ship ..... " 23 00

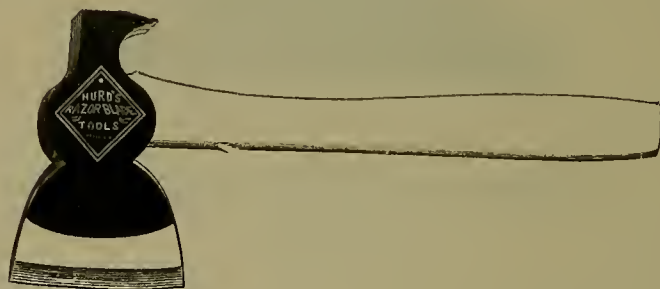
## HATCHETS.



## Shingling.

	MILLER'S.	HURD'S	HUNT'S.
No. 1, 3½ inch cut..... Per dozen, \$8 00	8 00	8 00	7 25
No. 2, 3¾ " " " " " 8 50	8 50	8 50	8 00
No. 3, 4¾ " " " " " 9 00	9 00	9 00	8 75

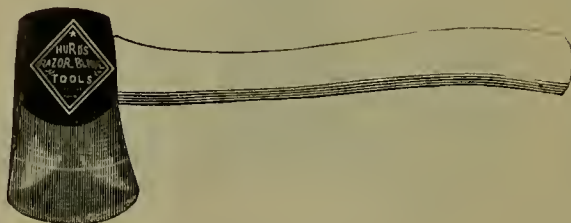
Half dozen in a box.



## Claw.

	MILLER'S.	HURD'S.	HUNT'S.
No. 1, 3½ inch cut..... Per dozen, \$9 00	9 00	9 00	7 75
No. 2, 3¾ " " " " " 9 50	9 50	9 50	8 50
No. 3, 4¾ " " " " " 10 00	10 00	10 00	9 25

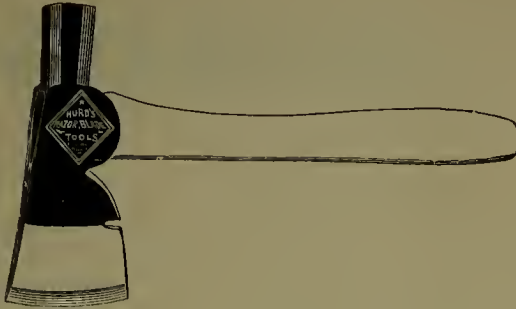
Half dozen in a box.



## Hunters'.

With 16-inch handles..... Per dozen, \$9 50  
One dozen in a case.

# HATCHETS.



## Lathing.

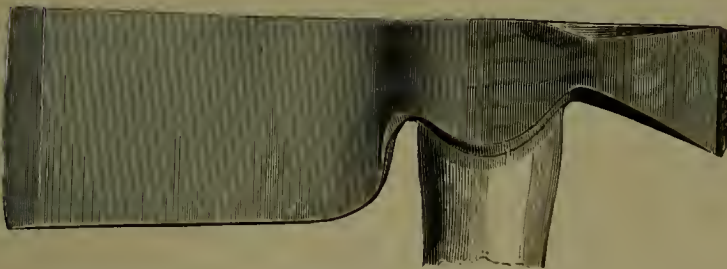
HURD'S.

No. 1, 2 1/2 inch cut.....	Per dozen, \$8 00
No. 2, 2 3/4 inch cut.....	" 8 50

HUNT'S.

No. 1, 2 1/4 inch cut.....	Per dozen, \$7 50
No. 2, 2 1/2 inch cut.....	" 8 25
No. 3, 3 inch cut.....	" 9 00

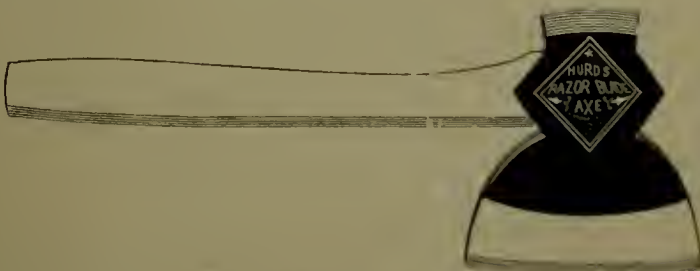
Half dozen in a box.



UNDERHILL'S.

No. 1, Full Polished.....	Per dozen, \$12 00
No. 2, Half Polished.....	" 11 00

Half dozen in a box.



## Broad.

HURD'S.

Nos.....	1	2	3	4	5	6
Cuts, inches.....	3 3/4	4 1/2	5	5 1/2	6	6 3/4
Per dozen.....	\$10 00	11 50	13 00	14 50	16 00	18 00

HUNT'S

Nos.....	0	1	2	3	4	5
Cuts, inches.....	4 1/4	4 3/4	5 3/8	6	6 1/2	7
Per dozen.....	\$11 50	12 50	14 50	16 50	18 00	19 50

Half dozen in a box.

## HANDLES.

Length, inches	24	28	30	32	34	36	38	40	42	44
Axe, Shaved, XXX..... Per dozen	....	....	....	....	....	\$5 00	5 25	6 25	7 25	8 25
Axe, Turned, Extra..... "	....	....	....	....	....	4 25	5 00	6 00	7 00	8 00
Axe, Turned, No. 1..... "	....	....	....	....	....	3 75	....	....	....	....
Axe, Turned, No. 2..... "	....	....	....	....	....	3 00	....	....	....	....
Axe, Double Bit, Extra..... "	....	....	....	....	....	4 25	5 00	6 00	7 00	8 00
Axe, Double Bit, Shaved..... "	....	....	....	....	....	5 75	6 75	7 75	8 75	9 75
Axe, Boys', Extra..... "	....	\$3 00	....	....	....	....	....	....	....	....
Axe, Broad, Reversible..... "	....	....	....	\$4 50	....	....	....	....	....	....
Adze, House and Ship, Extra..... "	....	....	....	....	\$4 50	....	....	....	....	....
Pick, Surface, Extra..... "	....	....	....	....	....	5 00	....	....	....	....
Pick, Surface, No. 1..... "	....	....	....	....	....	3 25	....	....	....	....
Pick, Surface, No. 2..... "	....	....	....	....	....	3 00	....	....	....	....
Pick, Drifting, Extra..... "	....	....	....	4 50	4 75	5 00	....	....	....	....
Pick, Drifting, No. 1..... "	....	....	....	3 50	....	....	....	....	....	....
Pick, Poll, Extra..... "	....	....	....	4 75	5 00	....	....	....	....	....
Pick, Poll, No. 1..... "	....	....	....	3 50	....	....	....	....	....	....
Pick, Coal, Extra..... "	....	....	....	4 00	....	....	....	....	....	....
Sledge, Extra..... "	\$2 00	2 25	2 50	2 75	3 00	3 50	3 75	4 00	....	....
Length inches.....	13	14	15	16	17	18	20	22	24	26
Hammer, A. E..... Per dozen	\$0 80	80	80	....	....	....	....	....	....	....
Hammer, Machinists..... "	1 00	1 00	1 25	1 25	....	1 50	1 50	1 75	2 00	2 25
Hatchet..... "	80	80	80	1 00	1 25	1 50	....	....	....	....

When ordering Pick Handles, please state if "Surface" or "Drifting" is wanted.

## CAPSTAN BARS.

Hickory, 6 feet long..... Per dozen, \$

## HANDSPIKES.

Hickory, 6 feet long..... Per dozen, \$



## SQUARES.

## Steel.

Length 2 Feet. Marked.

Nos.	Width, in.		Per dozen.
100	2	{ 1-16, 1-12, 1-10, $\frac{1}{8}$ , with Brace Measure, 8 square and 1-100ths scale, and Essex's New Board Measure, giving feet and inches in full..... }	\$66 00
1	2	{ 1-16, 1-12, $\frac{1}{8}$ , with Brace Measure, 8 square and 1-100ths scale, and Essex's New Board Measure, giving feet and inches in full..... }	48 00
2	2	{ 1-16, 1-12, $\frac{1}{8}$ , $\frac{1}{4}$ , with Brace Measure, 8 square scale, and Essex's New Board Measure, giving feet and inches in full..... }	44 00
2 $\frac{1}{2}$	2	Framing. 1-12, $\frac{1}{8}$ , both Sides and Edges.....	40 00
3	2	{ 1-16, 1-12, $\frac{1}{4}$ , with Brace Measure and Essex's New Board Measure, giving feet and inches in full..... }	35 00
4	2	{ 1-12, $\frac{1}{8}$ , $\frac{1}{4}$ , with Brace Measure, and Essex's New Board Measure, giving feet and inches in full..... }	33 50
5	2	{ 1-12, $\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{1}{2}$ , with Brace Measure and Essex's New Board Measure, giving feet and inches in full..... }	32 50
6	2	{ $\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{1}{2}$ , with Brace Measure and Essex's New Board Measure, giving feet and inches in full..... }	31 00
7	2	{ $\frac{1}{8}$ , $\frac{1}{4}$ , 1 inch, and Essex's New Board Measure, giving feet and inches in full..... }	30 00
8	1 $\frac{1}{2}$	1-12, $\frac{1}{8}$ , $\frac{1}{4}$ .....	27 00
9	1 $\frac{1}{2}$	$\frac{1}{8}$ , $\frac{1}{4}$ .....	25 50

Length 1 Foot.

10	1 $\frac{1}{2}$	1-12, $\frac{1}{8}$ , $\frac{1}{4}$ .....	22 50
11	1 $\frac{1}{2}$	$\frac{1}{8}$ , $\frac{1}{4}$ .....	21 00
12	1 $\frac{1}{2}$	1-16, 1-12, $\frac{1}{8}$ .....	30 00

Length 2 Feet.

13	2	{ $\frac{1}{8}$ , $\frac{1}{4}$ , 1 inch, Brace Measure and Essex's New Board Measure, giving feet and inches in full..... }	27 00
14	2	$\frac{1}{8}$ , $\frac{1}{4}$ , 1 inch, Essex's New Board Measure, giving feet and inches in full, $\frac{1}{8}$ ths on both sides.....	25 50
34	2	$\frac{1}{8}$ ths on both sides.....	22 00

Quarter dozen in a box.

## Steel, Nickel Plated.

Length 2 Feet. Marked.

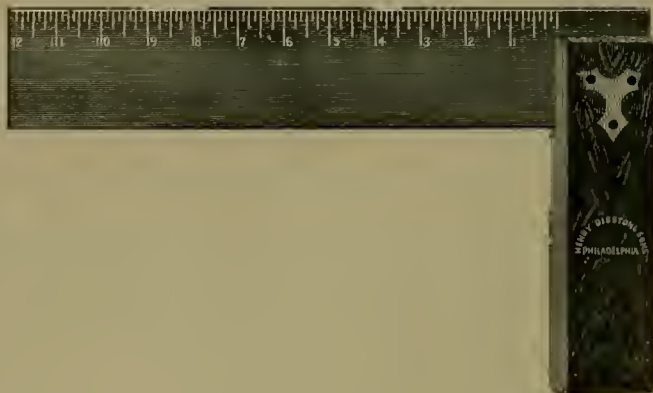
Nos.	Width, in.		Per dozen.
200	2	{ 1-32, 1-16, 1-12, 1-10, $\frac{1}{8}$ , with Brace Measure, 8 square and 1-100ths scale, and Essex's New Board Measure, giving feet and inches in full..... }	\$74 00
101	2	{ 1-16, 1-12, $\frac{1}{8}$ , with Brace Measure, 8 square and 1-100ths scale, and Essex's New Board Measure, giving feet and inches in full..... }	56 00
103	2	{ 1-16, 1-12, $\frac{1}{4}$ , with Brace Measure and Essex's New Board Measure, giving feet and inches in full..... }	42 00

## Iron.

Marked.

Nos.	Width, in.		Per dozen.
21	1 $\frac{1}{2}$	$\frac{1}{8}$ ths on one side.....	\$ 6 00
22	1 $\frac{1}{2}$	$\frac{1}{8}$ ths on both sides.....	10 00
24	2	$\frac{1}{8}$ ths on both sides.....	14 00

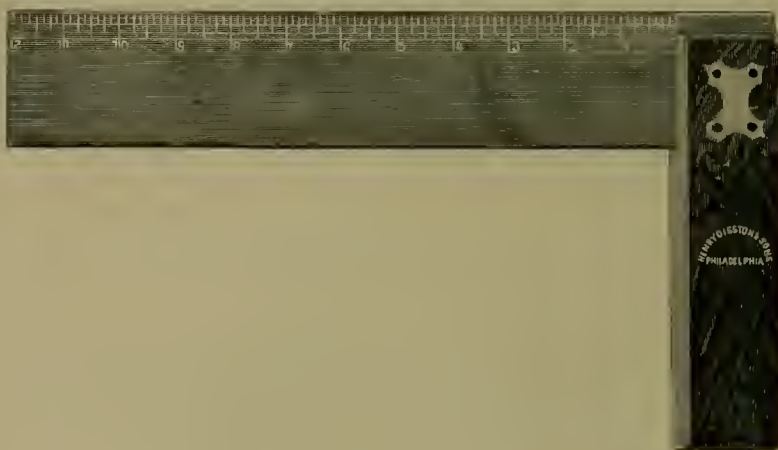
## TRY SQUARES.



No. 2. Rosewood, Steel Blade, Hardened and Tempered.

Length, inches.....	3	4	5	6	7	8	9	10	12
Per dozen.....	\$2 40	2 80	3 40	4 00	4 40	4 80	5 20	5 80	6 80

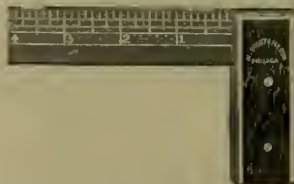
Half dozen in a box.



No. 1. Rosewood, Steel Blade, Marked with inches, Hardened and Tempered.

Length, inches.....	3	4	5	6	7	8	9	10	12
Per dozen.....	\$4 25	4 75	5 50	6 25	7 00	7 75	8 75	10 00	12 50

Half dozen in a box.



No. 1. Improved Iron Frame, with Rosewood (Inlaid) Sides, Steel Blade, Securely Riveted, Marked with inches.

Length, inches.....	3	4	6	8	9	10	12
Per dozen.....	\$6 75	8 00	10 00	13 00	14 50	17 00	21 75

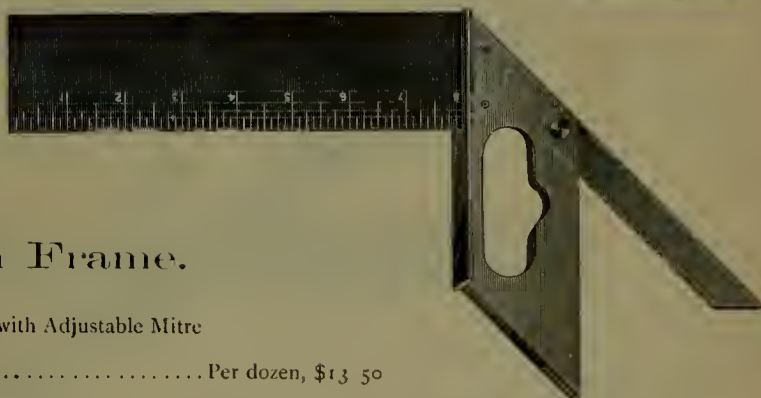
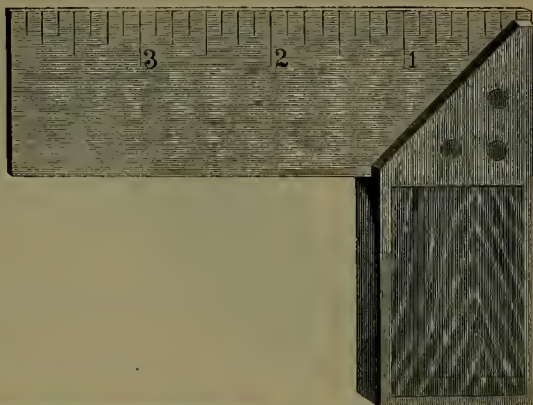
Half dozen in a box.

# TRY AND MITRE SQUARES.

Winterbottom's.

No. 1. Iron Frame, with Black Walnut (Inlaid)  
Sides, Graduated Steel Blades.

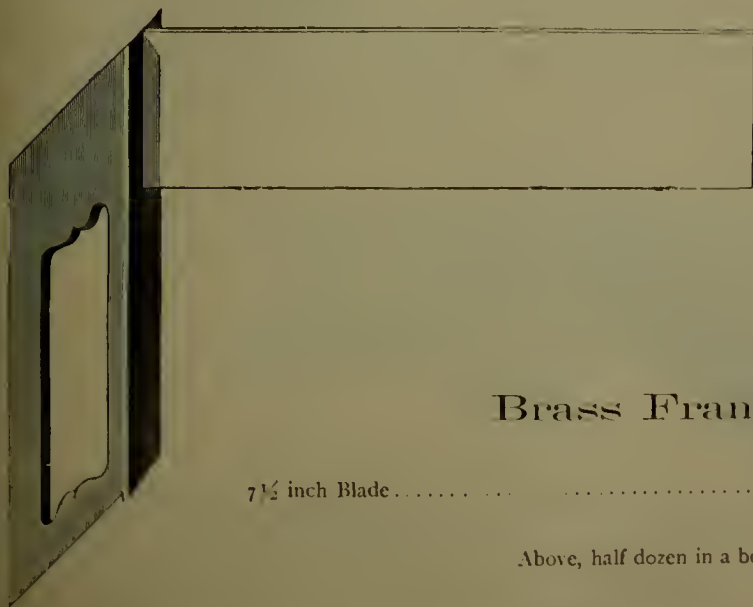
Length, inches.....	4	6	8
Per dozen.....	\$6 00	7 50	9 00



Iron Frame.

8 inch Graduated Steel Blade, with Adjustable Mitre

Blade..... Per dozen, \$13 50

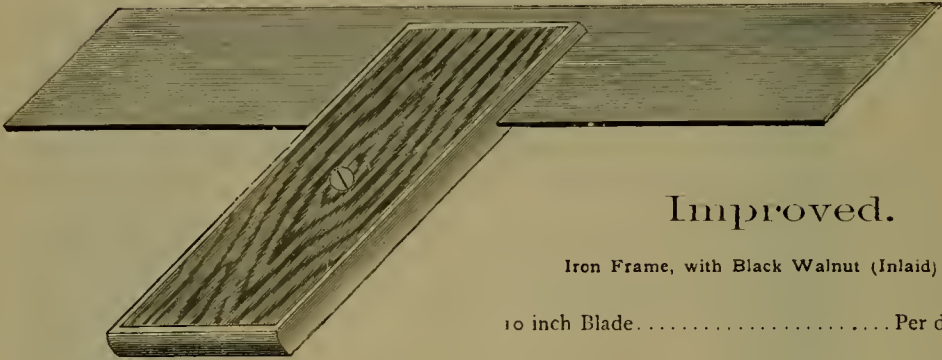


Brass Frame.

7½ inch Blade..... Per dozen, \$12 00

Above, half dozen in a box.

# MITRE SQUARES.



Improved.

Iron Frame, with Black Walnut (Inlaid) Sides.

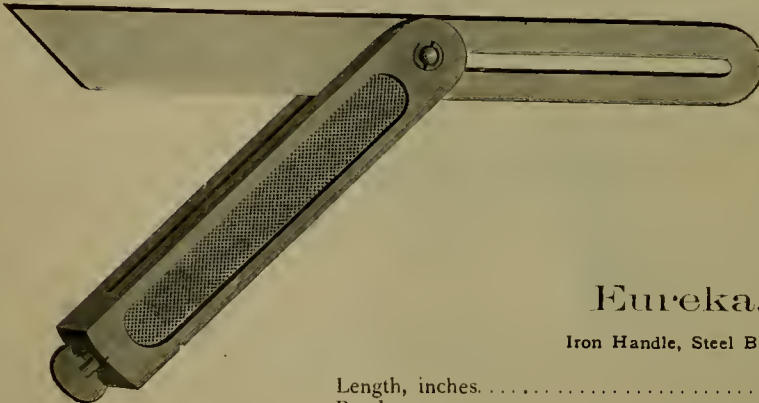
10 inch Blade..... Per dozen, \$8 00

# SLIDING T BEVELS.



No. 2. Rosewood, Brass Plated, Blade Hardened and Tempered.

Length, inches.....	6	8	10	12	14
Per dozen.....	\$4 25	4 75	5 00	5 50	6 00



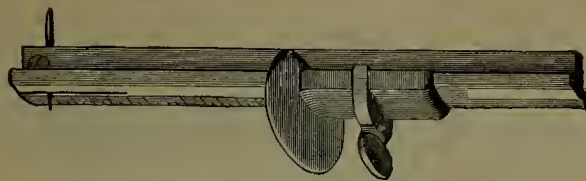
Eureka.

Iron Handle, Steel Blade.

Length, inches.....	6	8	10
Per dozen.....	\$6 00	6 50	7 50



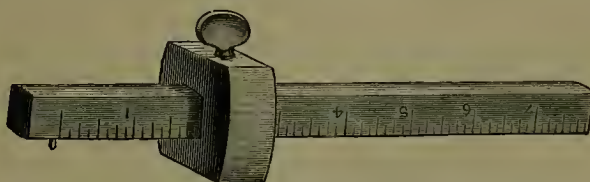
## GAUGES.



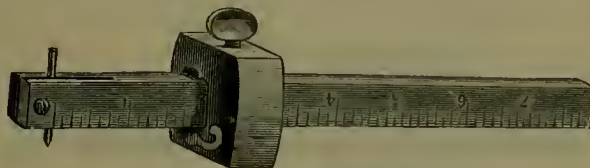
No. 60.

### Marking.

- |          |   |                   |
|----------|---|-------------------|
| No. 60.  | Patent Iron Marking and Cutting, Oval Bar, Marked, Adjusting Steel Point, equally well adapted for use on metal or wood.....  | Per dozen, \$5 00 |
| No. 60½. | Patent Iron Reversible Mortise, Marking and Cutting combined, Brass Slide, Oval Bar, Marked, Adjusting Steel Point, equally well adapted for use on metals or wood..... | " 8 00            |



- |         |  |                   |
|---------|--|-------------------|
| No. 61. | Beechwood, Boxwood Thumb Screw, Oval Bar, Marked, Steel Point..... | Per dozen, \$1 00 |
|---------|--|-------------------|

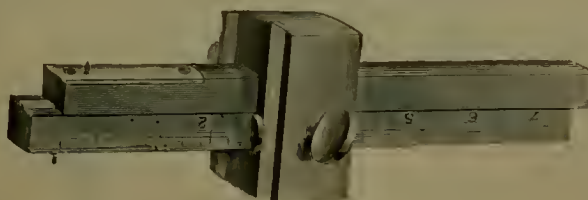


No. 62.

- |         |  |                   |
|---------|--|-------------------|
| No. 62. | Patent, Beechwood, Polished, Boxwood Thumb Screw, Oval Bar, Marked, Adjusting Steel Point.....                       | Per dozen, \$2 00 |
| No. 64. | Patent, Polished, Plated Head, Boxwood Thumb Screw, Oval Bar, Marked, Adjusting Steel Point.....                     | " 2 75            |
| No. 65. | Patent, Boxwood, Polished, Plated Head, Brass Thumb Screw and Shoe, Oval Bar, Marked, Adjusting Steel Point.....     | " 5 00            |
| No. 66. | Patent, Rosewood, Oval Plated Head and Bar, Brass Thumb Screw and Shoe, Oval Bar, Marked, Adjusting Steel Point..... | " 6 00            |

### Cutting.

- |         |   |                   |
|---------|---|-------------------|
| No. 70. | Mahogany, Polished, Boxwood Thumb Screws, Oval Bar, Plated Head, Marked, Steel Cutters..... | Per dozen, \$4 00 |
|---------|---|-------------------|



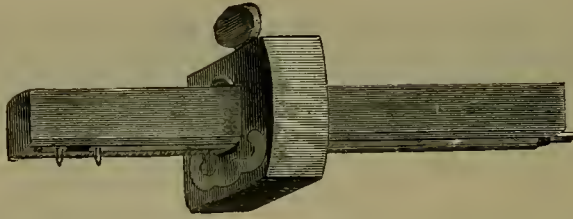
No. 71.

### Double.

- |         |   |                   |
|---------|---|-------------------|
| No. 71. | Patent, Marking and Mortise Gauge combined, Beechwood, Polished, Plated Head and Bars, Brass Thumb Screws and Shoes, Oval Bars, Marked, Steel Points....    | Per dozen, \$8 00 |
| No. 72. | Patent, Marking and Mortise Gauge combined, Beechwood, Polished, Boxwood Thumb Screws, Oval Bars, Marked, Steel Points.....                                 | " 4 00            |
| No. 74. | Patent, Marking and Mortise Gauge combined, Boxwood, Polished, Full Plated Head and Bars, Brass Thumb Screws and Shoes, Oval Bars, Marked, Steel Points.... | " 14 00           |



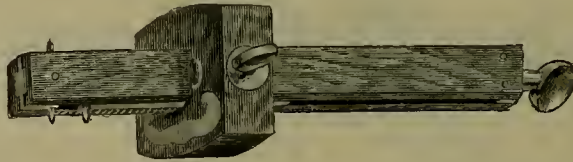
## GAUGES.



No. 73.

## Mortise.

- |         |  |                    |
|---------|--|--------------------|
| No. 68. | Plated Head, Adjustable Wood Slide, Brass Thumb Screw, Oval Bar, Marked, Steel Points.....                           | Per dozen, \$ 6 00 |
| No. 73. | Patent, Boxwood, Polished, Plated Head, Brass Slide, Brass Thumb Screw and Shoe, Oval Bar, Marked, Steel Points..... | " 8 00             |
| No. 76. | Patent, Boxwood, Polished, Plated Head, Screw Slide, Brass Thumb Screw and Shoe, Oval Bar, Marked, Steel Points..... | " 11 00            |
| No. 80. | Patent, Boxwood, Full Plated Head, Plated Bar, Screw Slide, Brass Thumb Screw and Shoe, Marked, Steel Points.....    | " 18 00            |
- Half dozen in a box.



No. 78.

- |         |   |                    |
|---------|---|--------------------|
| No. 78. | Patent, Rosewood, Plated Head, Screw Slide, Brass Thumb Screw and Shoe, Oval Bar, Marked, Steel Points..... | Per dozen, \$11 00 |
| No. 79. | Patent, Rosewood, Plated Head and Bar, Screw Slide, Brass Thumb Screw and Shoe, Marked, Steel Points.....   | " 13 00            |
- Half dozen in a box.

## Panel.

- |          |  |                    |
|----------|--|--------------------|
| No. 85.  | Beechwood, Boxwood Thumb Screw, Oval Bar, Steel Point.....         | Per dozen, \$ 3 20 |
| No. 85½. | Rosewood, Plated Head and Bar, Brass Thumb Screw, Steel Point..... | " 18 00            |
| No. 255. | Brass Thumb Screw, Oval Bar, Steel Points, Marked.....             | " 4 75             |
| No. 256. | Appletree, Brass Thumb Screw, Oval Bar, Steel Points, Marked.....  | " 6 00             |
- No. 85, one dozen in a box ; other Nos. half dozen.



## Slitting.

- |          |                             |                   |
|----------|-----------------------------|-------------------|
| No. 187. | With Handle and Roller..... | Per dozen, \$7 50 |
|----------|-----------------------------|-------------------|

## MEASURING TAPES.

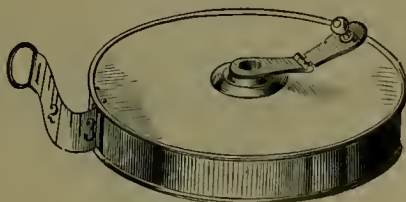


### Patent Spring.

Nickle Plated Case, with Patent Stop, Linen Tape,  $\frac{1}{4}$  inch Wide.

Nos.....	24	25
Length, feet.....	3	5
Per dozen.....	\$5 25	5 50

Half dozen in a box.

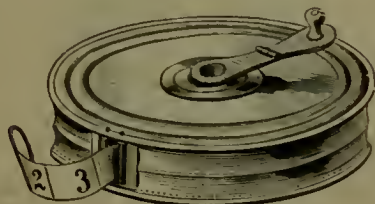


### Asses's Skin.

Brass Bound, Folding Handles, Common Cotton Tape,  $\frac{1}{2}$  inch Wide.

Nos.....	30	33	35	37
Length, feet.....	25	50	75	100
Per dozen.....	\$3 75	5 00	7 50	9 00

Half dozen in a box.



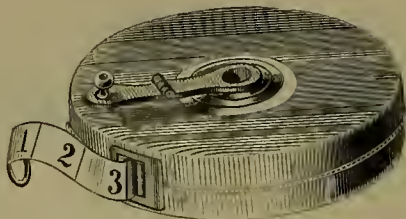
### Patent Leather.

Folding Handle, Best Cotton Tape,  $\frac{1}{2}$  inch Wide.

Nos.....	40	43	45	46	48
Length, feet.....	25	50	66	75	100
Per dozen.....	\$4 75	6 25	7 25	8 75	10 75

Half dozen in a box.

## MEASURING TAPES.



## Bend Leather.

Folding Handle, Heavy Holland Tape,  $\frac{5}{8}$  inches Wide.

Nos.....	120	121	122	123
Length, feet.....	50	66	75	100
Per dozen.....	\$16 00	17 00	18 00	20 00

## CHESTERMAN'S.



## Steel Tape.

Patent Spring, Nickel Plated Case.

No. 36SS. Length, feet.....	6	9	12
Each.....	\$		



## Metallic Tape.

Bend Leather, Folding Handle, Tape  $\frac{5}{8}$  inches Wide.

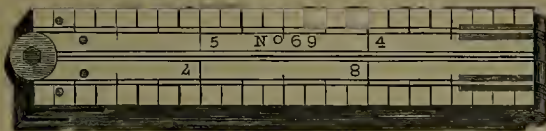
No. 34FH. Length, feet....	25	33	50	66	75	100
Each.....	\$					

## Steel Tape.

Bend Leather, Folding Handle, Tape  $\frac{3}{8}$  inches Wide

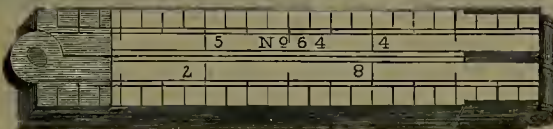
No. 38L. Length, feet.....	25	33	50	66	75	100
Each.....	\$					

## BOXWOOD RULES.



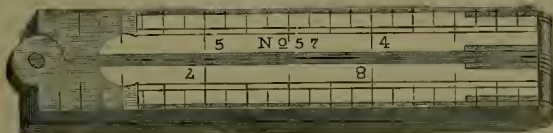
One Foot, Four Fold.

No. 69. Round Joint, Middle Plates, 8ths and 16ths inches,  $\frac{5}{8}$  inch wide..... Per dozen, \$3 00



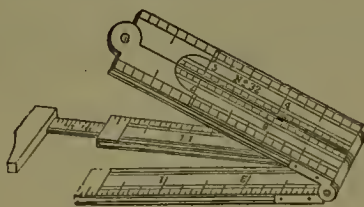
No. 65. Square Joint, Middle Plates, 8ths and 16ths inches,  $\frac{5}{8}$  inch wide.....Per dozen, \$3 50

No. 63.	Square joint,	Middle plates,	Guns and	Tons mikes,	7/8 inch wide.....	\$3 50
No. 65½.	"	Bound,	"	"	" " " "	11 00



No. 55. Arch Joint, Middle Plates, 8ths and 16ths inches,  $\frac{5}{8}$  inch wide.....Per dozen, \$4 00

No. 53.	Iron joint, 8th and 16th inches, $\frac{5}{8}$ inch wide.....	12 00
No. 57.	“ Bound, 8ths and 16ths inches, $\frac{5}{8}$ inch wide.....	“ 12 00

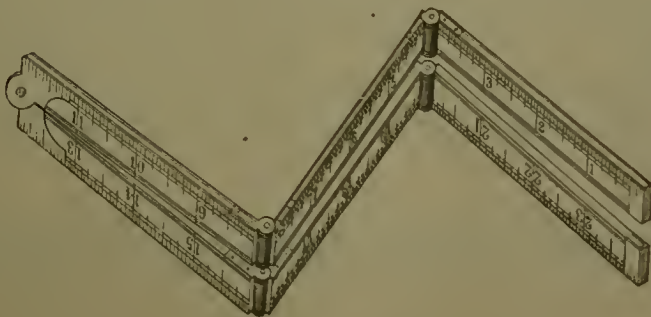


Caliper.

No. 36. Square Joint, Two Fold, 6 inch, 8ths, 10ths, 12ths and 16ths inches,  $\frac{7}{8}$  inch wide. . Per dozen, \$7 00

No. 30.	Square Joint, Two Fold, 6 inch, 8ths, 10ths, 12ths and 16ths inches, $\frac{3}{8}$ inch wide. Per dozen, \$7 00	
No. 32.	Arch Joint, Edge Plates, Four Fold, 12 inch, 8ths, 10ths, 12ths and 16ths inches, 1 inch wide. " 12 00	

No. 32 1/2.	Arch Joint, Bound, Four Fold, 12 inch, 8ths, 10ths, 12ths and 16ths inches,	1	20 00
	1 inch wide.		

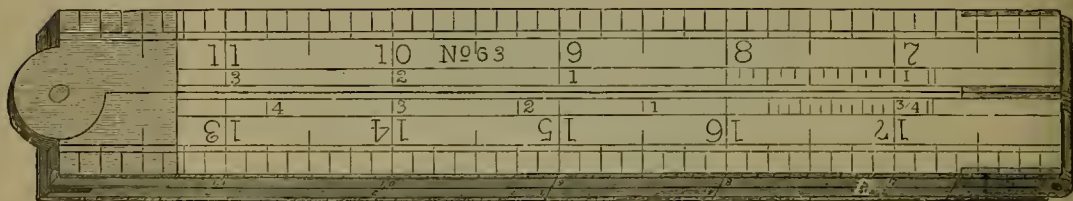


Two Feet, Six Fold.

No. 58. Arch Joint, Edge Plates, 8ths, 10ths, 12ths and 16ths inches,  $\frac{3}{4}$  inch wide . . . . . Per dozen, \$13 00

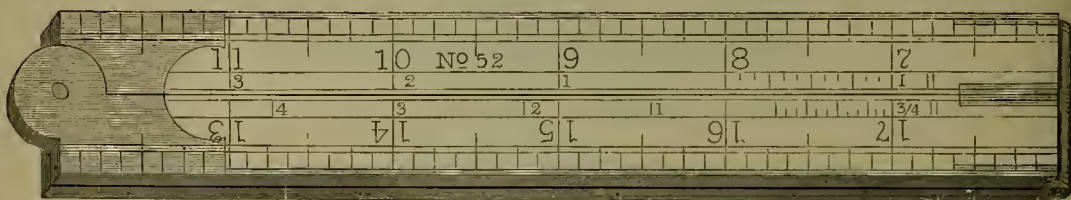


## BOXWOOD RULES.

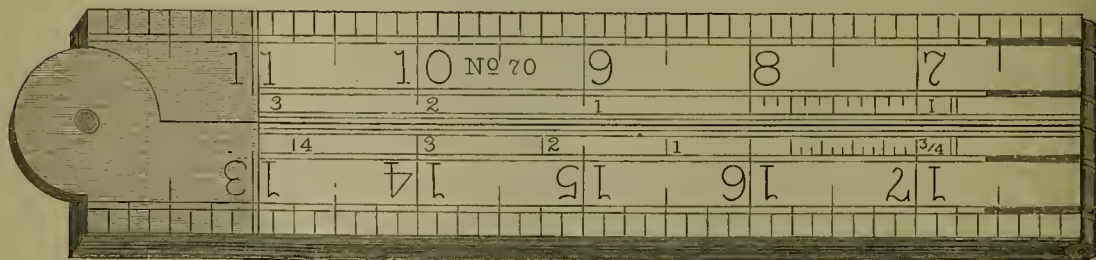


## Two Feet, Four Fold.

- No. 61. Square Joint, Middle Plates, 8ths and 16ths inches, 1 inch wide..... Per dozen, \$ 5 00
- No. 84. “ “ Half Bound, 8ths, 10ths, 12ths and 16ths inches, Drafting Scales,  
1 inch wide..... “ 12 00
- No. 62. “ “ Bound, 8ths, 10ths, 12ths and 16ths inches, Drafting Scales, 1 inch wide “ 15 00



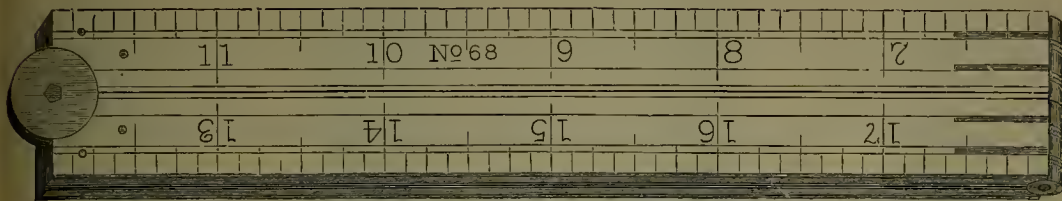
- No. 51. Arch Joint, Middle Plates, 8ths, 10ths, 12ths and 16th inches, Drafting Scales,  
1 inch wide..... Per dozen, \$ 6 00
- No. 52. “ “ Half Bound, 8ths, 10ths, 12ths and 16th inches, Drafting Scales,  
1 inch wide..... “ 13 00
- No. 54. “ “ Bound, 8ths, 10ths, 12ths and 16th inches, Drafting Scales, 1 inch wide “ 16 00
- No. 60. Double Joint, Bound, 8ths, 10ths, 12ths and 16th inches, Drafting Scales,  
1 inch wide..... “ 21 00



- No. 70. Square Joint, Middle Plates, 8ths and 16ths inches, Drafting Scales,  $1\frac{3}{8}$  inch wide.. Per dozen, \$7 00
- No. 72. “ “ Edge Plates, 8ths, 10ths and 16ths inches, Drafting Scales,  $1\frac{3}{8}$  inch wide “ 9 00
- Half dozen in a box.

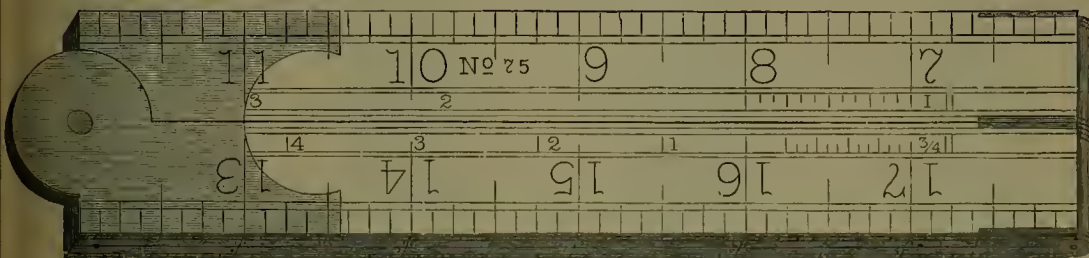


# BOXWOOD RULES.



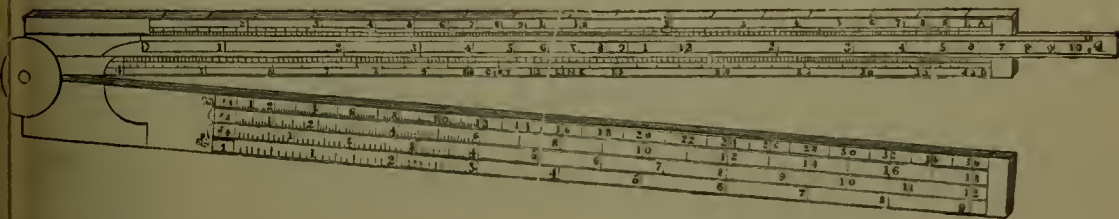
## Two Feet, Four Fold.

- No. 68. Round Joint, Middle Plates, 8ths and 16ths inches, 1 inch wide..... Per dozen, \$4 00  
One dozen in a box.



- No. 75. Arch Joint, Edge Plates, 8ths, 10ths and 16ths inches, Drafting Scales ..... Per dozen, \$11 00  
No. 76. Arch Joint, Bound, 8ths, 12ths and 16ths inches, Drafting Scales,  $1\frac{3}{8}$  inches wide.. " 20 00  
No. 83. Arch Joint, Edge Plates, 8ths, 12ths and 16ths inches, 100ths of a foot, and Octagonal Scales,  $1\frac{3}{8}$  inches..... " 14 00  
No. 79. Square Joint, Edge Plates, 12ths and 16ths inches, Board Measure, Drafting Scales,  $1\frac{3}{8}$  inch wide..... " 11 00  
No. 82. Arch Joint, Bound, 12ths and 16ths inches, Board Measure, Drafting Scales,  $1\frac{3}{8}$  inch wide..... " 22 00

Half dozen in a box.



## Two Feet, Two Fold, Slide.

- No. 26. Square Joint, Slide, 8ths, 10ths and 16ths inches, Octagonal Scales,  $1\frac{1}{2}$  inches wide.. Per dozen, \$9 00  
No. 12. Arch Joint, Bitted, Gunter's Slide, 8ths, 10ths and 16ths inches, 100ths of a foot, Drafting and Octagonal Scales,  $1\frac{1}{2}$  inches wide..... " 14 00  
No. 15. Arch Joint, Bound, Gunter's Slide, 8ths, 12ths and 16ths inches, Drafting and Octagonal Scales.. " 24 00

# IVORY RULES.



No. 38, Caliper.

## Caliper.

No. 38.	Square Joint, German Silver, Two Fold, 6 inch, 8ths, 10ths, 12ths and 16ths inches, $\frac{7}{8}$ inch wide.....	Per dozen, \$15 00
No. 39.	Square Joint, Edge Plates, German Silver, Four Fold, Caliper, 12 inch, 8ths, 10ths, 12ths and 16ths inches, $\frac{7}{8}$ inch wide .....	" 38 00
No. 40.	Square Joint, German Silver, Bound, Four Fold, 12 inch, 8ths and 16ths inches, $\frac{5}{8}$ inch wide.....	" 44 00
No. 54B.	Square Joint, German Silver, Bound, Four Fold, 12 inch, 8ths, 10ths, 12ths and 16ths inches, 13-16ths inch wide.....	" 45 00

## One Foot, Four Fold.

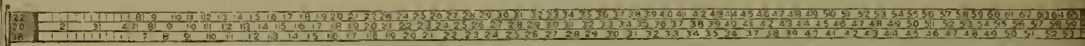
No. 92½.	Square Joint, German Silver, Middle Plates, 8ths and 16ths inches, $\frac{5}{8}$ inch wide..	Per dozen, \$14 00
No. 88½.	Arch Joint, German Silver, Edge Plates, 8ths and 16ths inches, $\frac{5}{8}$ inch wide...	" 21 00

## Two Feet, Four Fold.

No. 86.	Arch Joint, German Silver, Edge Plates, 8ths, 10ths, 12ths and 16ths inches, roots of a foot, Drafting Scales, 1 inch wide.....	Per dozen, \$64 00
No. 87.	Arch Joint, German Silver, Bound, 8ths, 10ths, 12ths and 16ths inches, Drafting Scales, 1 inch wide.....	" 80 00
No. 89.	Double Arch Joint, German Silver, Bound, 8ths, 10ths, 12ths and 16ths inches, Drafting Scales, 1 inch wide.....	" 92 00
No. 95.	Arch Joint, German Silver, Bound, 8ths, 10ths, 12ths and 16ths inches, Drafting Scales, 13/8 inch wide.....	" 102 00

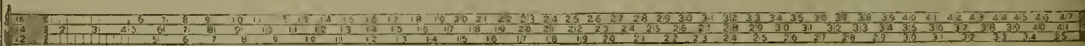
## Ship Carpenters' Bevels.

No. 42.	Boxwood, Double Tongue, 8ths and 16ths inches.....	Per dozen, \$6 00
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## Board Measures.

No. 43½.	Flat, Hickory, Cast Brass Head and Tip, 6 lines, 12 to 22 feet, 3 feet long....	Per dozen, \$12 00
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No. 49.	Flat, Hickory, Steel Head, Brazed, Extra Strong, 6 lines, 12 to 22 feet, 3 feet long....	Per dozen, \$26 00
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## Yard Sticks.

No. 33.	Polished.....	Per dozen, \$2 00
No. 41.	Brass Tips, Polished.....	" 3 50

## Gauging Rods.

No. 45.	120 Gallons, 3 feet long.....	Per dozen, \$7 00
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# PLUMBS AND LEVELS.



Sectional drawing and description of Patent Improved Adjustable Plumb and Level.

The Spirit-glass (or bubble tube), in the Level, is set in a Metallic Case, which is attached to the Brass Top-plate above it—at one end by a substantial hinge, and at the opposite end by an Adjusting Screw, which passes down through a flange on the Metallic Case. Between this flange and the Top-plate above, is inserted a stiff spiral spring, and by driving or slackening the Adjusting Screw, should occasion require, the Spirit-glass can be instantly adjusted to a position parallel with the base of the Level.

The Spirit-glass in the Plumb is likewise set in a Metallic Case, attached to the Brass Top-plate at its outer end. By the use of the Adjusting Screw at the lower end of the Top-plate, the Plumb-glass can be as readily adjusted to a right angle with the base of the Level, if occasion requires, and by the same method as adopted for the Level-glass.

## PLUMBS AND LEVELS.

No. 102.	Levels, arch top plate, two side views, polished, assorted, 10 to 16 inches . . . . .	Per dozen, \$ 9 00
No. 103.	Levels, arch top plate, two side views, polished, assorted, 18 to 24 inches . . . . .	" 12 00
No. 00.	Plumb and Level, arch top plate, two side views, polished, assorted, 18 to 24 inches	" 16 00
No. 0.	Plumb and Level, arch top plate, two side views, polished, assorted, 24 to 30 inches,	" 18 00
No. 1.	Patent Adjustable Mahogany Plumb and Level, arch top plate, two side views, polished, assorted, 26 to 30 inches . . . . .	" 27 00
No. 2.	Patent Adjustable Plumb and Level, arch top plate, two brass lipped side views, polished, assorted, 26 to 30 inches . . . . .	" 27 00
No. 3.	Patent Adjustable Plumb and Level, arch top plate, two side views, polished and tipped, assorted, 26 to 30 inches . . . . .	" 30 00
No. 4.	Patent Adjustable Plumb and Level, arch top plate, two brass lipped side views, polished and tipped, assorted, 26 to 30 inches . . . . .	" 39 00
No. 5.	Patent Adjustable Plumb and Level, triple stock, arch top plate, two ornamental brass lipped side views, polished and tipped, assorted, 26 to 30 inches . . . . .	" 48 00
No. 6.	Patent Adjustable Mahogany Plumb and Level, arch top plate, two brass lipped side views, polished, assorted, 26 to 30 inches . . . . .	" 33 00
No. 9.	Patent Adjustable Mahogany Plumb and Level, arch top plate, two ornamental brass lipped side views, polished and tipped, assorted, 26 to 30 inches . . . . .	" 48 00
No. 10.	Patent Adjustable Mahogany Plumb and Level, triple stock, arch top plate, two ornamental brass lipped side views, polished and tipped, assorted, 26 to 30 inches	" 60 00
No. 11.	Patent Adjustable Rosewood Plumb and Level, arch top plate, two ornamental brass lipped side views, polished and tipped, assorted, 26 to 30 inches . . . . .	" 90 00
No. 25.	Patent Adjustable Mahogany Plumb and Level, arch top plate, improved double adjusting side views, polished and tipped, 30 inches . . . . .	" 54 00
No. 35.	Patent Adjustable Mason's Plumb and Level, $3\frac{3}{4}$ inches wide, 42 inches long . . .	" 36 00

Half dozen in a box.

## LEVEL GLASSES.

Length, inches . . . . .	1	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Per dozen . . . . . \$								

One dozen in a box.



# IRON PLUMBS AND LEVELS.



Nicholson's.

Nos.....	13	14	15
Length, inches.....	14	20	24
Per dozen.....	\$18 00	21 00	27 00



Davis' Adjustable-Double.

Nos.....	8	9
Length, inches.....	18	24
Per dozen.....	\$30 00	36 00

# PLUMB, LEVEL AND INCLINOMETER.



Davis' Adjustable-Iron.

No. 1, Length 6 inches.....	Per dozen, \$24 00
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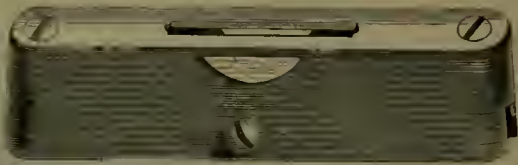


Nos.....	2	3	4
Length, inches.....	12	18	24
Per dozen.....	\$30 00	36 00	42 00

# POCKET LEVELS.



Nos. 40 and 41.



No. 46.

No. 40. Iron Top Plate, Japanned.....	Per dozen, \$2 50
No. 41. Iron, Brass Top Plate.....	" 3 00
No. 46. Iron, Polished, Brass Top Plate.....	" 3 50

One dozen in a box.



## PLUMB BOBS.



Nos. 00 and 0. Half Size No. 0.



Half Size No. 2.

## Iron. Japanned.

No. 00.	Adjusted Top, weight, 1 lb. 2 ozs. each.....	Per dozen, \$4 50
No. 0.	" " " 2 lbs. 10 ozs each.....	" 6 00
No. 2.	" " " 9½ ozs. each.....	" 1 60



Nos. 3 and 4. Half Size No. 4.



Half Size No. 13.



Half Size No. 6.

## Lead.

## STEEL POINTED.

No. 3.	Weight 12 ozs. each.....	Per dozen, \$5 40
No. 4.	" 1¼ lb. ".....	" 7 20

## MASONS' WIRED.

No. 13.	Weight 1 lb. each.....	Per dozen, \$5 00
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## Brass.

No. 5.	Brass. Steel Pointed, weight 6½ ozs. each.....	Per dozen, \$7 00
No. 6.	" " " 12 ".....	" 10 00

## Adjustable.



No. 1.	Bronze Metal, with Steel Point.....	Each, \$1 50
No. 2.	" " " ".....	" 1 75
No. 5.	Iron, with Steel Point.....	" 1 00

# HANDLED BRAD AWLS.



Assorted ..... Per gross, \$  
Assorted, Large..... "

## AWLS AND TOOLS.



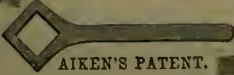
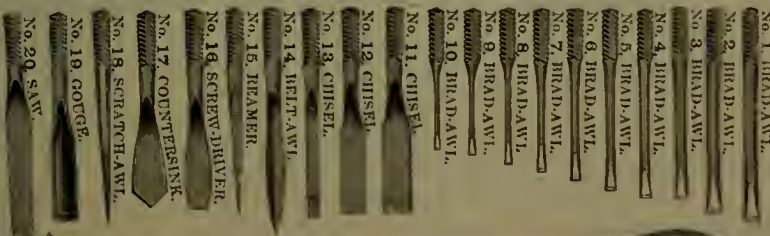
Full Size. Nos. 2 and 3.

No. 2, Iron Handle, with twelve tools..... Per dozen, \$4 00  
No. 3, " " twenty " ..... " 5 50



Full Size. No. 1.

No. 1, Turkey Boxwood Handle, with twenty tools..... Per dozen, \$7 50



AIKEN'S PATENT.

The Awls, Tools, and Wrench  
are all contained in the receptacle  
in the handle.

Two-thirds Size. Nos. 20 and 120.

No. 20, Aiken's Genuine, with ten awls and ten tools (see cut)..... Per dozen, \$10 00  
No. 120, Aiken's Pattern, with fourteen awls and six tools..... " 7 00

## AWLS.



Common.

## Saddler's.

Common, assorted..... Per gross, \$  
 Patent, assorted..... "



Common.



Patent.

## Sewing.

Common, assorted..... Per gross, \$  
 Patent, assorted..... "



Common.



Patent.

## Pegging.

Common, assorted..... Per gross, \$  
 Patent, assorted..... "

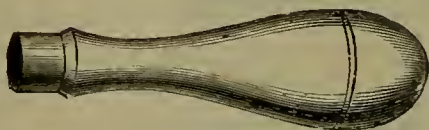


Common.

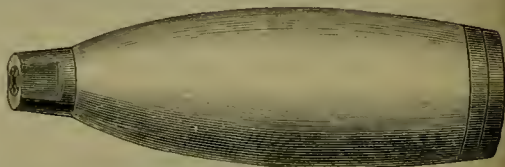
## Brad.

Common, assorted..... Per gross, \$  
 Patent, assorted..... "

## AWL HAFTS..



Common Brad.



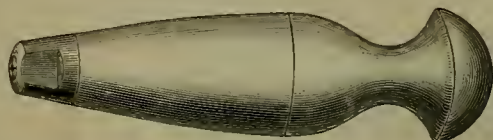
No. 6, Patent Pegging.

## Brad.

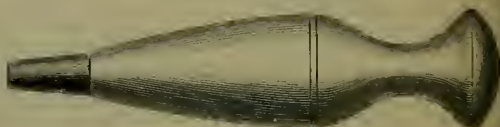
Common, Beech, Polished, Brass Ferrules, assorted..... Per gross, \$

## Pegging.

No. 6, Patent, Hickory, Leather Top, Steel Screw and Nut, with Wrench..... Per dozen, \$  
 No. 11, Common, Brass Ferrule..... Per gross,



No. 6½, Patent Sewing.



No. 10, Common Sewing.

## Sewing.

No. 6½, Patent, Apple-tree, Steel Screw and Nut, with Wrench..... Per dozen, \$  
 No. 10, Common, Brass Ferrule..... Per gross,

## HANDLES.



### Firmer Chisel.

Hickory.....	Small.	Medium	Large.
Per Gross.....	\$		
Apple .....	Small.	Medium.	Large.
Per Gross.....	\$		

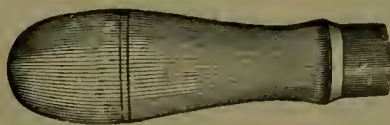


### Socket Firmer Chisel.

Hickory, assorted.....	Per gross, \$
Apple, " .....	"

### Socket Framing.

Hickory, Polished, Iron Ferrules, assorted.....	Per gross, \$
All the above one dozen in a box.	



### File.

Soft Wood, Iron Ferrules, assorted.....	Per gross, \$
One dozen in a package.	

### Soldering Copper.

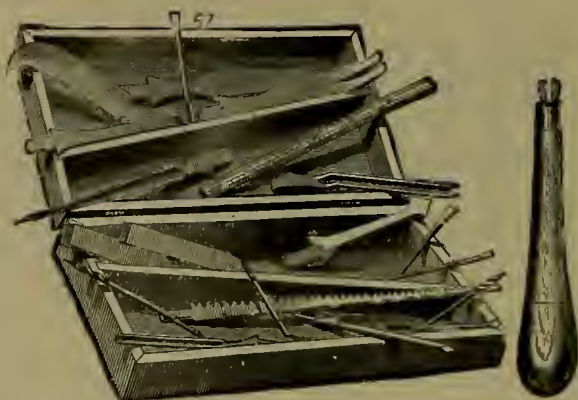
Soft Wood.....	Per dozen, \$
One dozen in a package.	

## FILE CLEANERS.

Handled .....	Per dozen, \$
On Leather, 3 by 5 inches.....	Per square inch,



## FAMILY TOOL CHESTS.



Walnut Case, twenty tools. . . . . Per dozen, \$

## SCRATCH AWLS.



Common.

Beech Handle, Length of Blade 6 inches. . . . . Per dozen, \$



Socket.

Cast Steel, Forged and Polished, Length of Blade 6 inches. . . . . Per dozen, \$

## SCREW DRIVERS.



Plain.

Polished Handles, Forged Steel Blades.

Length of Blade, inches. . . . .	2	3	4	5	6	7	8	9	10	12
Per dozen. . . . .	\$1 50	1 75	2 25	2 75	3 00	3 50	4 00	5 00	6 00	6 75

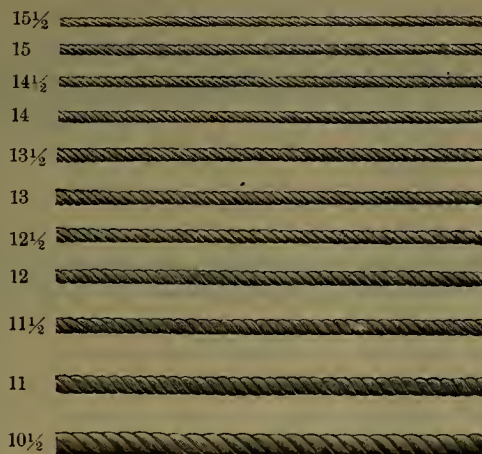


Ratchet.

Length of Blade, inches. . . . .	4	5	6	8
Per dozen. . . . .	\$9 00	10 20	12 00	13 50



## LINES.



## Chalk.

### TWISTED COTTON.

Length, 30 Feet each.

Nos.....	8	9	10	10 1/2	11	11 1/2	12	12 1/2
Per dozen.....	\$3 50	3 00	2 50	2 25	2 00	1 50	1 00	85
Nos.....	13	13 1/2	14	14 1/2	15	15 1/2	15 7/8	
Per dozen.....	\$0 75	65	55	50	45	42	40	

### BRAIDED COTTON.

Length, 20 Feet each.

Nos.....	0	1	2	3
Per gross.....	\$6 00	6 50	7 00	7 50

## Trot.

### TWISTED COTTON.

Nos.....	1	2	3	4
Length, feet.....	50	75	75	100
Per dozen.....	\$2 00	3 00	4 00	6 00

## Masons'.

### TWISTED COTTON.

No. 27.	Length, 100 feet.....	Per dozen, \$3 00
No. 28.	" 50 " .....	" 1 50

## CHALK LINE REELS.



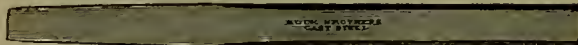
Without Awls.....	Per dozen, \$
With Awls.....	"

# NAIL SETS.



Octagon.

Cast Steel, Half Polished..... Per dozen, \$  
Three dozen in a box.



Square.

Cast Steel, 3-16 to 5/8 inch, Full Polished..... Per dozen, \$  
Best Cast Steel, 3-16 to 5/8 inch, Full Polished..... "  
Best " 11-32 to 3/8 " " " " " "  
Three dozen in a box.

# COLD CHISELS.



Cast Steel.

Diameter, inches.....	3/8	1/2	5/8	3/4	7/8	1
Per dozen.....\$						

Half dozen in a box.

# GLUE POTS.



Enameled.

Enameled.

Nos .....	000	00	0	1	2	3	4	5	6
Per dozen.....\$									

Family.

Eureka..... Per dozen, \$

## BENCH SCREWS.



Wood.



Wrought Iron.

### Wood.

V Thread.

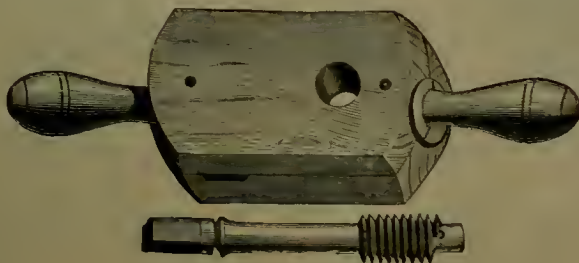
Diameter of Screw, inches.....	2	2 1/4	2 1/2
Per dozen .....	\$		

### Wrought Iron.

Movable Collar, Double Thread, Wood Handle.

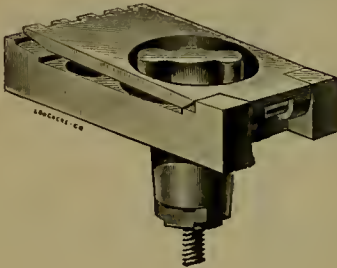
Diameter of Screw, inches.....	1	1 1/8	1 1/4	1 1/2
Per dozen .....	\$			

## WOOD SCREW CUTTERS.

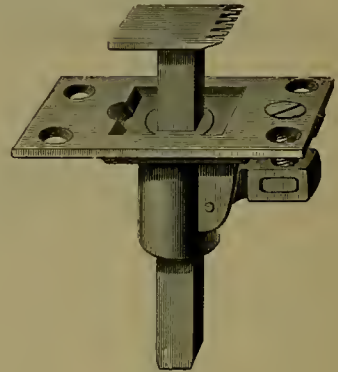


Inches.....	1/2	5/8	3/4	7/8	1
Complete, each.....	\$0 80	80	90	1 00	1 20

# BENCH HOOKS.



Weston's, No. 2.



Morrill's.

## Weston's.

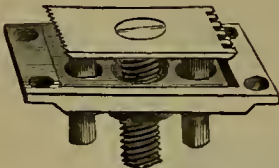
No. 2..... Per dozen, \$9 00

One dozen in a box.

## Morrill's.

Per dozen.....\$9 00

Half dozen in a box.



Smith's, No. 1.



Smith's, No. 2.

## Smith's.

No. 1..... Per dozen, \$9 00

No. 2..... " 9 00

One dozen in a box.

# SAW SETS.



German.



Lever.

## German.

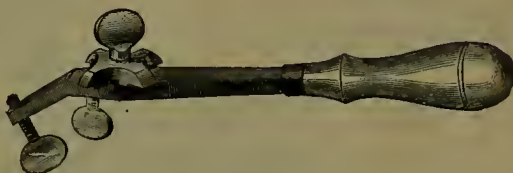
Iron Handle, 6 cuts, 6 inch.....Per dozen, \$  
 Iron Handle, 6 " 8 " ..... "

## Lever.

Wood Handle.....Per dozen, \$



Hand.



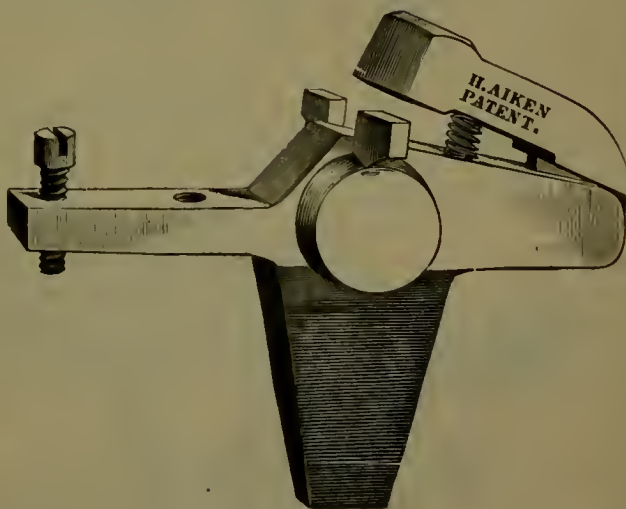
Cross-cut.

## Stillman's Pattern.

Hand.....Per dozen, \$  
 Cross-cut..... "



Star.



Aiken's.

## Star.

Hand.....Per dozen, \$

## Aiken's.

Imitation.....Per dozen, \$  
 Genuine..... "



## SAW SETS.

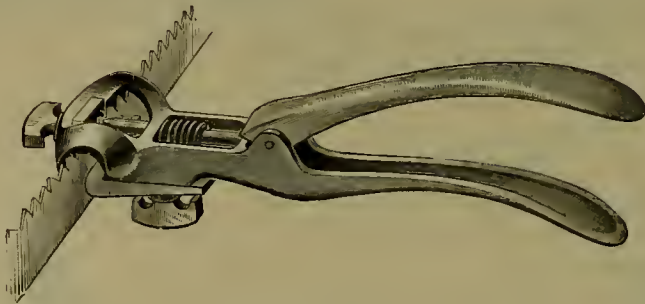


Half Size. Hand.

## Leach's.

Hand, 7 inches long.....Per dozen, \$  
 Cross-cut, 13 inches long....."

Half dozen in a box.

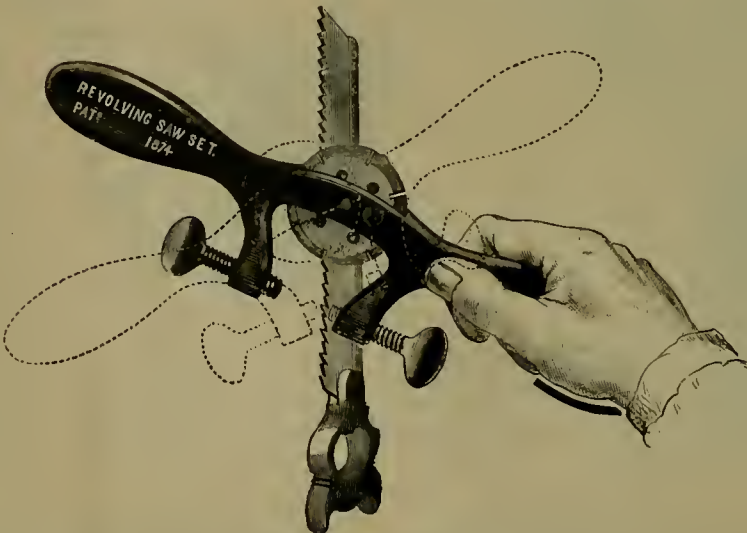


No. 1.

## Morrill's.

No. 1, for Hand, Panel, Wood and Meat Saws.....Per dozen, \$  
 No. 3, for Cross-cut with single pointed teeth, or small Circular Saws from 14 to 20 gauge,  
 inclusive....."

Half dozen in a box.

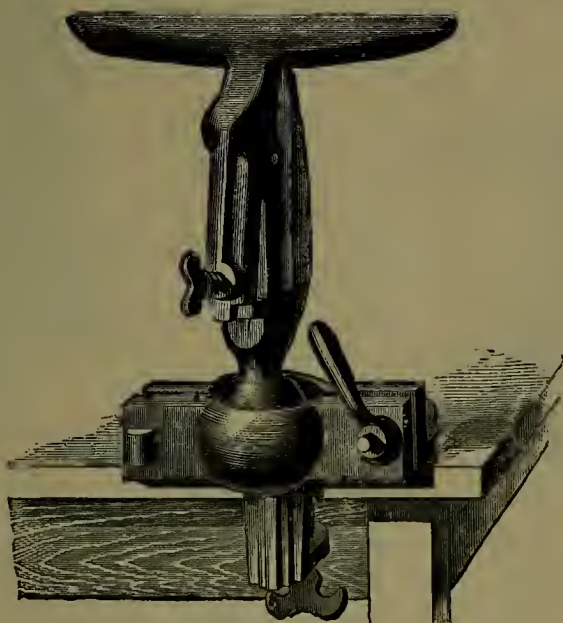
Disston's  
Revolving.

No. 1, large size, per doz \$  
 No. 2, small " "

Half dozen in a box.

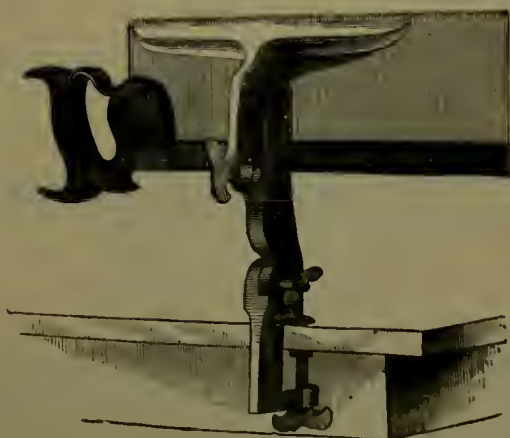
## SAW FILERS' VISES.

DISSTON'S.



Ball and Socket.

No. 1, Japanned ..... Per doz, \$



Adjustable.

No. 2, Japanned ..... Per dozen, \$

# SAW FILERS' VISES.



## Stearns'.

No. 0. Japanned.....Per dozen, \$ | No. 3. Japanned.....Per dozen, \$

## Wentworth's.

No. 1. Japanned.....Per dozen, \$  
No. 2. "....."

# SAW SWAGES.



No. 3 For Band and Small Circular Saws (full size cut).....Each, \$



No. 2.

No. 1. For large Circular Saws.....Each, \$  
No. 2. For small Circular and Mill Saws (full size cut)....."

# COMPASSES.



Fine Polished Cast Steel.

Length, inches.....	4	6	8
Per dozen.....	\$4 50	5 50	7 50

# DIVIDERS.



Wing.



Spring.

## Wing.

Fine Polished Cast Steel.

Length, inches.....	5	6	7	8	9	10	11	12	15	18
Clark's.....Per dozen, \$	5 50	5 50	6 50	7 50	9 00	10 00	....	12 00	18 00	....
B. & C.....	7 00	7 50	9 00	10 25	12 50	13 75	15 25	16 50	27 50	41 25

## Spring.

Fine Polished Cast Steel.

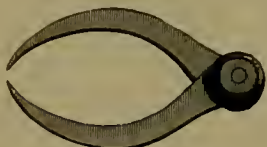
Length, inches.....	3	4	5	6	7	8	9	10
Per dozen.....	\$4 80	4 80	4 80	4 80	6 00	6 80	8 00	9 60

# TRAMMEL POINTS.



No. 1. Small.....	Per pair, \$1 50
No. 2. Medium.....	" 2 00
No. 3. Large.....	" 2 75

## CALIPERS.



Inside or Outside.



Inside.

## Inside or Outside.

Length, inches.....	2½	3	4	5	6	7	8	9	12
Clark's..... Per dozen, \$....	3 00	3 25	3 75	4 25	5 00	6 00	....	....	....
B. & C..... " .....	5 00	....	6 50	....	8 00	....	....	11 00	15 00

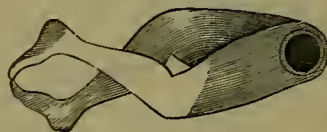
## Inside.

Length, inches.....	4	6	8
Clark's..... Per dozen, \$3 25	4 25	6 00	....

Half dozen in a box.



Double.



Fancy.

## Double.

Length, inches.....	2½	3	4	5	6
Clark's..... Per dozen \$....	3 50	4 25	5 00	6 00	....
B. & C..... " .....	5 50	....	7 00	....	9 50

## Fancy.

2½ inches long.....	Per dozen, \$3 50
---------------------	-------------------

Half dozen in a box.



Wing.



Spring.

## Wing.

Length, inches.....	5	6	8	10	12
Clark's..... Per dozen \$....	7 00	9 00	11 00	13 00	....
B. & C..... " .....	9 00	9 50	11 00	13 75	16 50

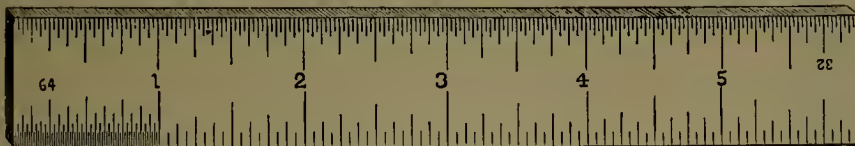
## Spring.

Length, inches.....	3	4	5	6	7	8	10
Per dozen..... \$5 40	5 40	5 40	5 40	6 60	7 20	10 00	....

Half dozen in a box.



# RULES.



## Standard Steel.

No. 1, 2, 3 or 4 Graduations.

Length, inches.....	3	4	6	9	12	18	24	36
Each.....	\$0 50	75	1 00	1 50	2 00	3 00	4 00	8 00

No. 1 Graduations.

No. 2 Graduations.

No. 3 Graduations.

No. 4 Graduations.

1st cor.	10, 20, 50, 100.....	10, 20, 50, 100.....	16, 32, 64.....	64 whole length.
2d "	12, 24, 48.....	12, 24, 48.....	16.....	32 " "
3d "	16, 32, 64.....	16, 32, 64.....	16.....	16 " "
4th "	14, 28.....	8.....	8.....	8 " "

No. 5 Graduations.

Length, inches.....	12	24
Each.....	\$3 00	6 00

No. 5 Graduations .....	1st cor. 16, 32, 64.
	2d " 11, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25.
	3d " 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38.
	4th " 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 100.

## Shrink.

Boxwood, 24 1/4 inches long, Shrink on both sides, No. 1 Graduation.....	Each, \$3 00
Steel, 24 1/4 " " " one side and Standard on the other, divided on each side to 10, 20, 50, 100—12, 24, 48—16, 32 and 64 parts of an inch.....	" 5 00



## Triangular Steel.

Length, inches.....	3	4	6	12
Each.....	\$0 60	0 80	1 20	3 00

Graduations—16, 64, 100 to the inch whole length.

16, 32, 64 " " "  
20, 50, 100—12, 24, 48—16, 32, 64 to the inch.

The 12 inch are divided only as follows: 8, 10, 12, 14, 16, 20, 24, 28, 48, 50 64, 100 to the inch.



## Triangular Boxwood.

6 inches long, divided to scales of 3-32, 1/8, 3-16, 1/4, 3/8, 1/2, 3/4, 1, 1 1/2 and 3 inches to the foot and 1-16ths of inch.....	Each, \$1 50
12 " " ditto.....	" 2 00
24 " " ditto, with 2 and 4 instead of 3-32 and 3-16 to the foot.....	" 5 00

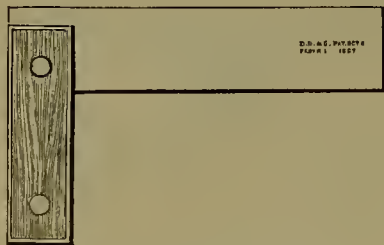


## Steel Caliper.

Length, inches.....	3
Each.....	\$3 50

These Rules are divided in four ways. A, divided on outside like cut, on slide to 32ds and 64ths. B, divided on outside like cut, on slide to 64ths and 100ths. C, divided on outside to 8ths, 16ths, 32ds and 64ths; on slide to 32ds and 64ths. D, divided on outside to 8ths, 16ths, 32ds and 64ths; on slide to 64ths and 100ths.

## SQUARES.



Patent Hardened.



Graduated Steel.

## Patent Hardened.

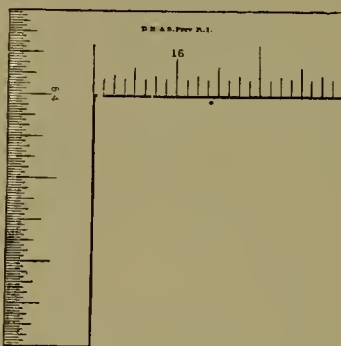
For Wood Workmen.

4	Inch Blade.....	Each, \$1 25
6 1/2	".....	" 1 75
9 1/2	".....	" 2 50
12	".....	" 3 50

## Graduated Steel.

For Machinists. Not Hardened.

3	Inch Blade.....	Each, \$2 50
4	".....	" 3 00
6	".....	" 4 00
9	".....	" 7 00
12	".....	" 8 00



## Thin Steel.

2	Inch Blade, 1-20 inch thick.....	Each, \$1 50
3	" 1-16 ".....	" 2 00
4	" 1-14 ".....	" 2 50
6	" 1-14 ".....	" 3 50
8	" 1-12 ".....	" 4 50
10	" 1-10 ".....	" 5 50

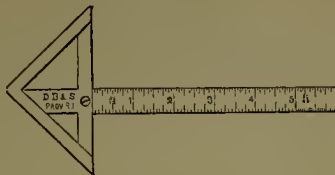
The 2 and 3 inch are divided to 16ths and 64ths on one side, and 32ds and 64ths on the other.  
The 4, 6, 8 and 10 inch Squares are divided on both sides to 16ths and 32ds of inches.



## Steel Caliper.

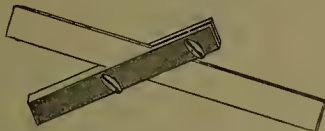
2	Inch, with Adjusting Screw.....	Each, \$4 00
4	" " ".....	" 5 00

## SQUARES.

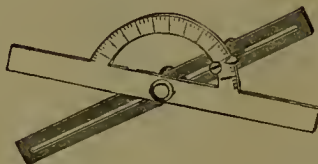


### Universal or Center.

4 Inch Blade.....	Each, \$2 50
6 " ".....	" 3 00
8 " ".....	" 4 00
10 " ".....	" 5 50
12 " ".....	" 7 00



T Square and Universal Bevel.



Bevel Protractor.

### T Square and Universal Bevel.

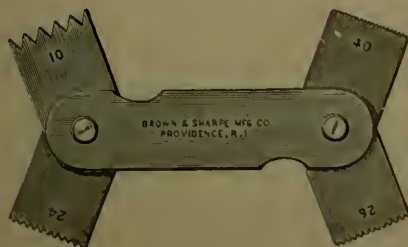
Cast Steel, Tongue 8 inches, Head 5 inches.....	Each, \$5 00
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### Bevel Protractor.

With Sliding Arm and Half Circle, Divided to Degrees.

With 6 inch Sliding Arm.....	Each, \$6 50
With 10 " " ".....	" 7 00

## SCREW PITCH GAUGES.



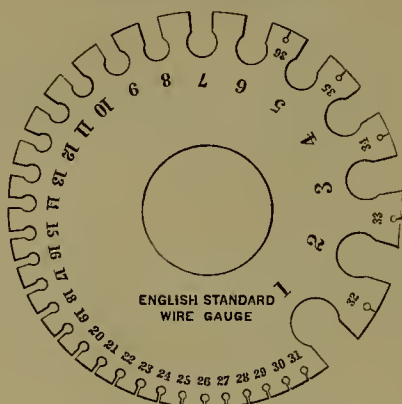
Full Size D. B. & S.



Full Size Star.

D. B. & S., for 16 pitches.....	Each, \$1 00
Star, for 12 inches.....	" 50

## GAUGES.



## Stubs' Wire.

SINGLE.

2½ inches diam., Nos. 1 to 26..... Each, \$  
 3 " " " 1 to 26..... "  
 3 " " " 1 to 36..... "

DOUBLE.

1¾ inch diam., Nos. 1 to 26..... Each, \$



Front Side.

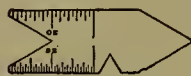
Cuts half size



Reverse Side.

## Pocket, Screw and Wire.

Each.....\$3 00



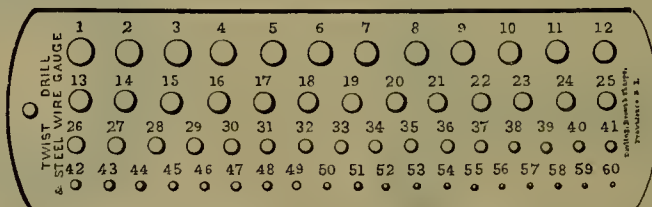
Cut Half Size.

## Center Gauge.

And Gauge for Grinding and Setting Screw Tools.

Each.....\$0 40

The angles used in this Gauge are 60 degrees. The four divisions upon the Gauge of 14, 20, 24 and 32 parts to the inch are for measuring the number of threads to the inch of taps and screws. The following parts to the inch can be determined by them, viz: 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16, 20, 24 and 32.



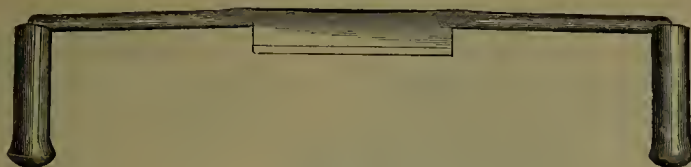
## Twist Drill and Steel Wire.

For Gauging Morse Twist Drills and Stubs' Drawn Steel Wire.

Each.....\$2 50

# COOPERS' TOOLS.

BARTON'S.



## Shaveup Shaves.

Length, inches.....	7	8
Per dozen.....	\$12 50	14 50



Hoop Shave.

## Hoop Shaves.

Length, inches.....	7	8
Per dozen.....	\$11 25	13 25

## Inshaves.

Two Handles.

Per dozen.....	\$11 50
----------------	---------

## Spoke 'Shaves.

Double Iron, Wood Handle.....	Per dozen, \$15 00
-------------------------------	--------------------



Right Hand.

Left Hand.

## Champer Knives.

Length, inches.....	4½	5	5½	Keg size.
Per dozen.....	\$17 50	18 50	20 50	15 00



Nantucket.



Socket Handled.



Short and Oval.

## Drivers.

Nantucket.....	Per dozen, \$7 50
Socket Handled.....	" 11 25
Short and Oval.....	" 11 25



## COOPERS' TOOLS.

BARTON'S.



Axe.



Adze.

## Axes.

No. 1.	Tight Barrel, Handled.....	Per dozen, \$33 00
No. 2.	Flour " " .....	" 27 00

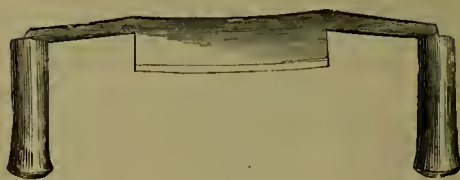
## Adzes.

Apple-tree Handles, Bolted Through.

No. 2.	Flour Barrel, Handled.....	Per dozen, \$27 00
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Heading Shave.



Stave Shave.

## Heading Shaves.

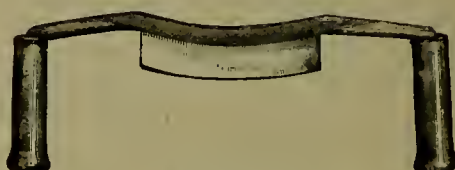
Length, inches.....	9	10	12	14
Per dozen.....	\$16 50	18 50	22 50	26 50

## Stave Shaves.

Length, inches.....	7	8
Per dozen.....	\$12 50	14 50



Backing Shave.



Hollowing Shave.

## Backing Shaves.

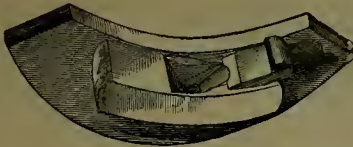
Length, inches.....	7	8
Per dozen.....	\$12 50	14 50

## Hollowing Shaves.

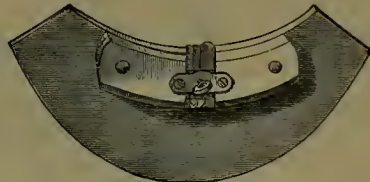
Length, inches.....	7	8
Per dozen.....	\$12 50	14 50

# COOPERS' TOOLS.

BARTON'S.



Howel.



Croze.

## Howels.

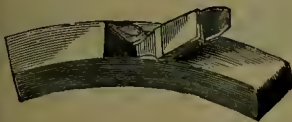
Tight Barrel.

Beech Boards, 5 and 10 gallon kegs.....	Per dozen, \$17 50
Apple-tree Boards, 5 and 10 gallon kegs .....	" 21 00

## Crozes.

Tight Barrel

Beech Boards, 5 and 10 gallon kegs.....	Per dozen, \$13 50
Apple-tree Boards, 5 and 10 gallon kegs.....	" 21 00



Leveler.



Jointer.

## Levelers.

Apple-tree .....	Per dozen, \$13 00
------------------	--------------------

## Jointers.

Beech, 2 feet 10 inches, Double Irons .....	Per pair, \$3 20
Beech, 4 " 4 " " .....	" 4 00
Beech, 5 feet long, 4x4 inches, Double Irons .....	" 5 00



## Scrapers.

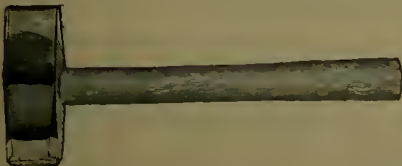
Per dozen.....	\$6 00   Per dozen .....	\$5 00
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## Vises.

## Hammers.

Steel Face, Handled.



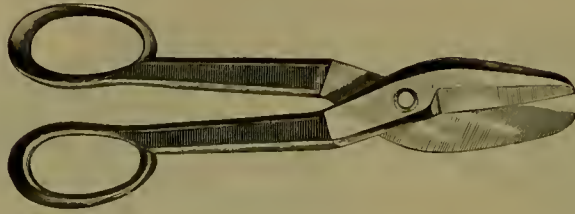
Weight, pounds.....	3½ to 4½	4½ to 5½
Per dozen.....	\$18 00	19 50



## Froes.

Length, inches.....	8	9	10	12	14	16
Per dozen.....	\$12 00	13 50	15 00	18 00	21 00	24 00

TINNERS' SHEARS.



Hand.

Nos .....	6½	7	8	9	10
Cut, inches .....	4½	4	3½	3	2½
Each .....	\$3 50	3 00	2 50	2 00	1 75



Circular Hand.

Nos .....	7	8	9	10
Each .....	\$4 00	3 50	3 00	2 75



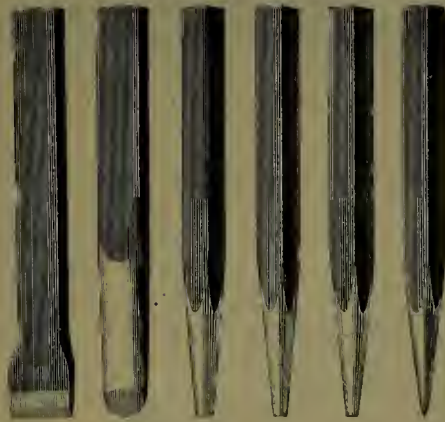
Bench.

Nos .....	0	1	2	3	4	5	6
Cut, inches .....	10½	9	8½	8¾	8	7	6
Each .....	\$12 00	8 00	7 00	6 00	5 00	4 00	3 50

TINNERS' SNIPS.

Length, inches .....	6	8	10	12
Stubs', No. 172 .....	Each, \$			
Boker's .....	“			

# PUNCHES.



## Tinners'.

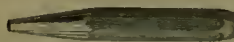
IN SETS.

Cast Steel, 4 Punches and 2 Chisels..... Per set, \$



HOLLOW.

Wrought Shank,  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches..... Per inch, \$



## Solid.

SQUARE.

Cast Steel, Nos. 0, 1, 2, 3, 4, 5..... Per dozen, \$

OCTAGON

Cast Steel, Nos.....	0	1	2	3	4	5
Size of point.....	$\frac{1}{8}$	$5-3^2$	$3-16$	$7-3^2$	$\frac{1}{4}$	$9-3^2$
Per dozen.....	\$					

One dozen in a box.

## Prick.

Cast Steel, Half Polished..... Per dozen, \$

One dozen in a box.

## PUNCHES.



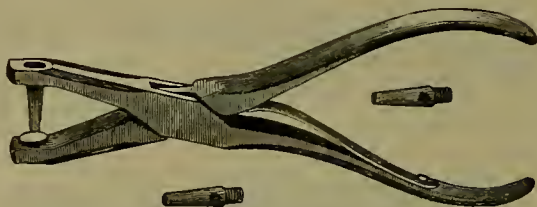
## Saddlers' or Drive.

Polished.

Nos. ....	1	2	3	4	5	6	7	8
B. & C., per dozen.....	\$5 25	5 25	5 25	5 25	5 25	5 75	5 75	5 75
P. S. & W. " .....	2 00	2 00	2 00	2 00	2 00	2 25	2 25	2 25
Nos. ....	9	10	11	12	13	14	15	16
B. & C., per dozen.....	\$5 75	5 75	6 25	6 25	7 50	7 50	8 75	8 75
P. S. & W. " .....	2 25	2 50	2 50	2 50	2 50	2 50	....	....

Table showing corresponding sizes of Copper Rivets, Rivet Sets and Drive Punches.

No. of Copper Rivets.....	5	6	7	8	9	10
No. of Rivet Sets.....	0	1	2	3	4	5
No. of Drive Punches .....	8	7	6	5	4	3



## Spring.

Assorted.....	Per dozen, \$
Assorted, with one extra Tube. ....	"



## Revolving.

Four Tubes.....	Per dozen, \$
Six Tubes.....	"

## RIVET SETS.



Cast Steel.

Nos. ....	00 and 0	1 and 2	3 and 4	5 and 6	7 and 8
Per dozen.....	\$9 00	7 50	6 00	4 50	3 75



## CARPENTERS' PINCERS.



Length, inches.....	6	8	10	12
Per dozen.....	\$2 00	3 00	5 00	7 50

## SHOEMAKERS' PINCERS.



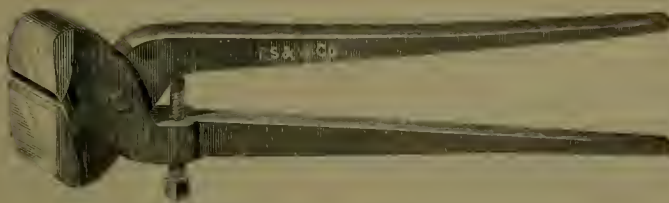
No. 3.....	Per dozen, \$	No. 4.....	Per dozen, \$
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## END CUTTING NIPPERS.



W. & H.

Length, inches.....	5	5½	6	7	8
Per dozen.....	\$5 25	5 75	6 50	8 40	11 00



P. S. & W.

Nos.....	1	2	3	4	5
Each.....	\$				

S. & H.

With Interchangeable Cutters that can be taken off and sharpened

Nos.....	1	2	3	4	5
Length, inches.....	12	11	10	8	5
Each.....	\$				

Extra Cutters.

Nos.....	1	2	3	4	5
Per pair.....	\$				

## PLIERS.



### Flat Nose.

Length, inches.....	3 to 4½	5	5½	6	7	8
Per dozen.....	\$					
	Half dozen in a box.					



## Round Nose.

Length, inches.....	3 to 4½	5	5½	6	7	8
Per dozen.....	\$					
Half dozen in a box.						



## Side Cutting, Flat.

Length, inches.....	4	4½	5	5½	6	7	8
Per dozen.....\$							

Half dozen in a box.



### Side Cutting, Raised.

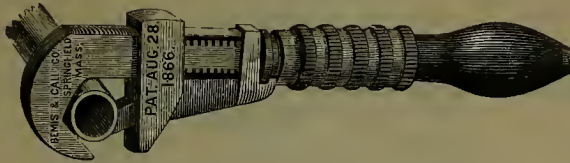
Length, inches.....	4	4½	5	5½	6	7	8
Per dozen.....\$							

Half dozen in a box.





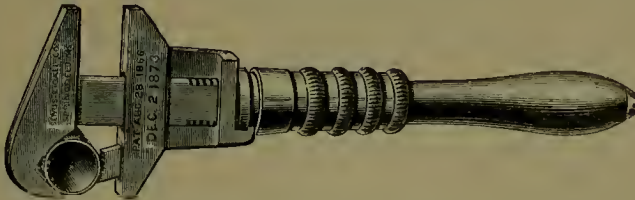
# PIPE WRENCHES.



## Cylinder.

Bright, with Long Nut.

10 inch.	For Pipe	$\frac{1}{2}$	to 1	inches, inclusive.	Per dozen, \$20 75
12 "	"	$\frac{1}{2}$	" $1\frac{3}{4}$	"	" 24 00
15 "	"	$\frac{1}{2}$	" 2	"	" 34 00
18 "	"	$\frac{1}{2}$	" $2\frac{1}{2}$	"	" 50 00



## Combination.

Bright, with Long Nut.

10 inch.	For Pipe	$\frac{1}{2}$	to 1	inches, inclusive.	Per dozen, \$25 25
12 "	"	$\frac{1}{2}$	" $1\frac{3}{4}$	"	" 28 50
15 "	"	$\frac{1}{2}$	" 2	"	" 40 50

# PIPE CUTTERS.



## Stanwood's.

No. 1.	Cuts Pipe	$\frac{1}{8}$	to $\frac{3}{4}$	inches, inclusive.	Each, \$3 00
No. 2.	"	1	" 2	"	" 4 50
No. 3.	"	2	" 3	"	" 14 00

## Extra Cutter Wheels.

Nos.	1	2	3
Each	\$0 25	40	50



## GAS PIPE STOCKS AND DIES.



## Crane's.

Size C.	Threads, $\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ and 1 inch Pipe.....	Each, \$11 00
Size D.	" 1, $1\frac{1}{4}$ and $1\frac{1}{2}$ inch Pipe.....	" 11 00
Size E.	" $1\frac{1}{4}$ , $1\frac{1}{2}$ and 2 ".....	" 16 00
Size G.	" $2\frac{1}{2}$ and 3 inch Pipe (Cutter Dies).....	" 41 00

## Morris, Tasker &amp; Co.'s.

No. 1.	Threads, $\frac{1}{4}$ , $\frac{3}{8}$ and $\frac{1}{2}$ inch Pipe.....	Each, \$8 00
No. 2.	" $\frac{3}{4}$ and 1 inch Pipe.....	" 11 00
No. 3.	" $1\frac{1}{4}$ , $1\frac{1}{2}$ and 2 inch Pipe, with Leader Screws.....	" 21 50
No. 4.	" $2\frac{1}{2}$ and 3 inch Pipe, with Leader Screws and Guides.....	" 50 00

## Dies.

## CRANE'S.

For Stock size.....	C	D	E
Each.....	\$1 50	2 10	3 00

## MORRIS, TASKER &amp; CO.'S.

For Stock No.....	1	2	3
Each.....	\$1 50	2 50	4 00

## Guides.

## CRANE'S.

For Stock size.....	C	D	E
Each.....	\$0 25	0 40	0 40

## MORRIS, TASKER &amp; CO.'S.

For Stock No.....	1	2	3
Each.....	\$0 25	0 45	0 60

# SCREW PLATES AND PIPE CUTTERS.



## Jarecki's.

No. 1.	Cuts and Threads	$\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ and $\frac{3}{4}$ inch Pipe	Each, \$14 00
No. 2.	"	$\frac{1}{2}$ , $\frac{3}{4}$ , 1 and $1\frac{1}{4}$ "	" 16 00
No. 3.	"	1, $1\frac{1}{4}$ , $1\frac{1}{2}$ and 2 "	" 20 00
No. $3\frac{1}{2}$ .	"	$\frac{1}{2}$ , $\frac{3}{4}$ , 1, $1\frac{1}{4}$ , $1\frac{1}{2}$ and 2 inch Pipe	" 22 50
No. 4B.	"	$2\frac{1}{2}$ , 3, $3\frac{1}{2}$ and 4 inch Pipe	" 50 00

## Dies.

For Stock No.	1	2	3	$3\frac{1}{2}$	4B
Per set.	\$2 00	2 00	2 00	2 00	3 00

## GAS PIPE TAPS.



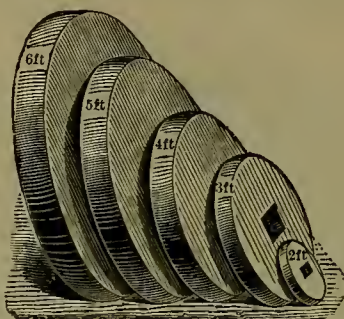
Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each	\$0 60	65	75	1 00	1 35	1 70	2 00	2 30	3 50	6 00	8 00

## COMBINED DRILL, REAMER AND PIPE TAP.



Size, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Each	\$4 50	6 00	7 25	8 50

## GRINDSTONES.



Berea.

From 15 to 500 lbs. .... Per lb., \$

Newcastle.

Extra Large for Machine Shops. .... Per lb., \$



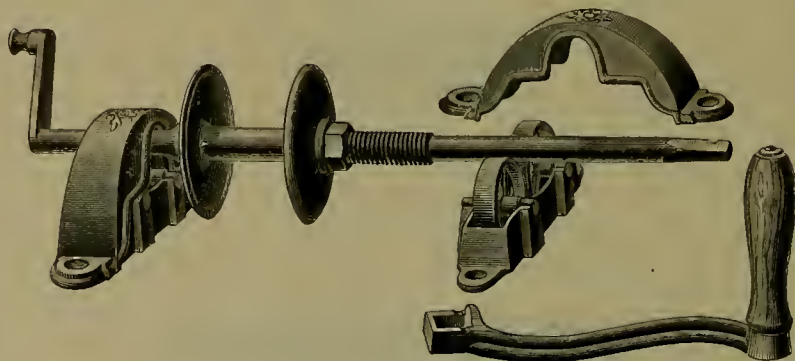
Family.

6 inch diameter. .... Per dozen, \$

8 " " " " " "

10 " " " " " "

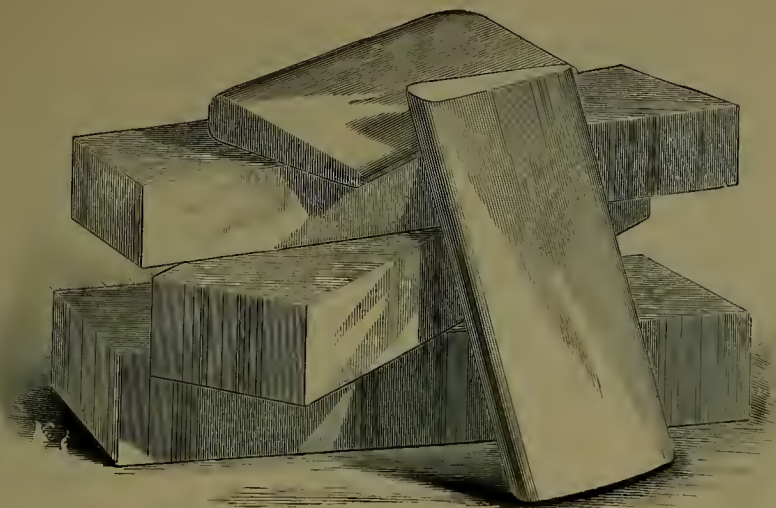
## GRINDSTONE FIXTURES.



Japanned Covered Bearings, Patent Incased Rollers.

Nos .....	50	51	52	53
Length of Shaft, inches .....	24	19	17	15
Per dozen sets .....	\$20 00	17 50	15 00	14 00

# OIL STONES AND SLIPS.



## Washita.

STONES.		Extra.	SLIPS.		Extra.
No. 1.			No. 1.		
Per lb.....	\$		Per lb.....	\$	

## Arkansas.

STONES.		Extra.	SLIPS.		Extra.
No. 1.			No. 1.		
Per lb.....	\$		Per lb.....	\$	

## Turkey.

Stones..... Per lb, \$

## Washita, Mounted.

Length, inches ..... 6 7 8  
 No. 1..... Per dozen, \$

## Hindoostan Stones and Slips.

Stones.....	No. 1.	Axe.	Slips.
Per lb.....	\$		

## Sandstones.

Per lb..... \$

## CHALK.

Common.....	White (lump).	Red (fingers).
Per lb.....	\$	
Prepared.....	White.	Red. Blue.
Per gross.....	\$	

## OILERS.



Malleable Iron.



Chase's.



Paragon.

## Chase's.

Nos.....	00	0	1	2	3	4	5	6
Zinc.....	Per dozen, \$0 90	1 00	1 25	1 50	1 75	2 25	3 00	4 00
Copper.....	"	2 25	2 50	3 00	3 50	4 50	5 75	7 50
Brass.....	"	2 25	2 50	3 00	3 50	4 50	5 75	7 50

## Paragon.

Nos.....		1	2	3	4
Zinc.....	Per dozen, \$2 00	2 50	2 75	3 25	
Copper.....	"	3 25	4 00	4 75	5 50

## Malleable Iron.

Nos.....		1	2	3
Per dozen.....	\$			

## Rubber.

Nos.....		0	1	2
Per dozen.....	\$			

All the above, half dozen in a box.

## Oiler Spouts.

## TIN.

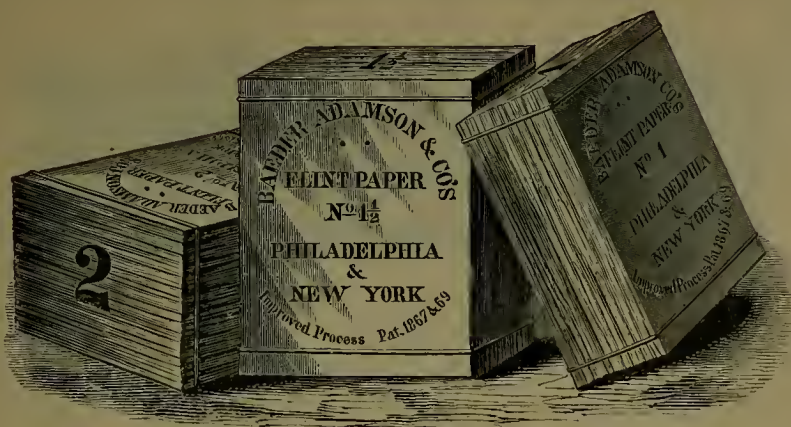
No. 3.....	5 inches.	No. 4.....	5	7	9 inches.
Per dozen.....	\$	Per dozen.....	\$		

## BRASS.

No. 3.....	5 inches.	No. 3.....	5	7	9 inches.	No. 5.....	7	9 inches.
Per dozen.....	\$	Per dozen.....	\$			Per dozen...	\$	



# SAND PAPER.



## Flint.

Nos .....	00	0	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Per Ream.....	\$4 50	4 50	4 50	4 50	4 50	5 00	5 00	5 00
Assorted, in Half Reams .....	\$4 50							

Half ream in a package.

## Star.

Nos. 00 to 3 and assorted, all sizes.....	Per ream, \$3 75
---	------------------

Half ream in a package.

## Flint, in Rolls.

Nos .....	1 1/2	2	2 1/2	3
Per yard.....	\$0 10	0 11	0 12	0 13

50 yards long, 23 1/2 inches wide.

# EMERY PAPER.

Nos .....	00	0	1/2	1	1 1/2	2	2 1/2	3
Per Ream.....	\$6 50	6 50	6 50	6 50	6 50	7 50	9 50	11 50

Half ream in a package.

# EMERY CLOTH.

Nos. ....	Crocus	00	0	100	1/2	1	1 1/2	2	2 1/2	3
Per Ream....	\$18 00	18 00	18 00	18 00	18 00	18 00	18 00	20 00	24 00	26 00

One quire in a package.

Comparative Numbers of Emery Cloth and Paper with Emery.

Nos .....	00	0	100	1/2	1	1 1/2	2	2 1/2	3
Emery.....	Flour	120	100	90	80	70	60	54	46

# EMERY.

Flour.....	Per lb., \$
Nos. 120, 100, 90, 80, 70, 60, 54 and 46.....	"

In square tin cans of 10 lbs. each.

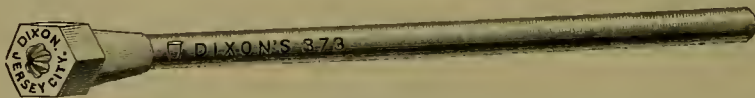
In Kegs of about 275 lbs .....	Less per lb., \$
--------------------------------	------------------

# LEAD PENCILS.



## Office.

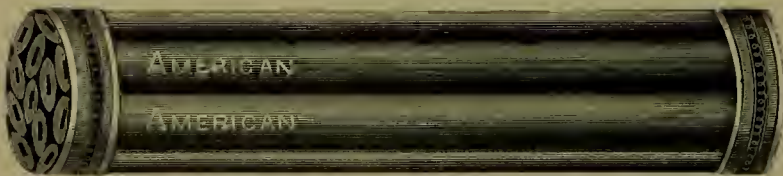
Round, Black, Polished, Plain	Per gross, \$
Round, Red, " "	"
Round, Black, " Stamped in Gold, "Jet Black".	"
Round, Red, " " "Red Coat".	"
Round, Black, " " "Huntington, Hopkins & Co., Nos. 1, 2, 3, 4."	"



## With Rubber Heads.

Round, Black, Polished, Plain	Per gross, \$
Round, " Stamped in Gold, "Jet Black".	"
Round, Red, " " "Red Coat".	"

H. H. & Co., half gross in a box ; all others one gross.

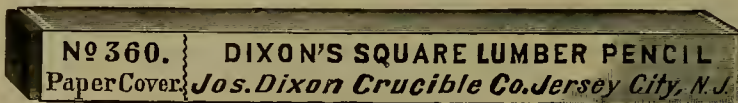


## Carpenters'.

Whitewood, Colored and Varnished, stamped "Huntington, Hopkins & Co "

Length, inches	7	9	12
Per gross			

Half gross in a box



## Lumber.

All Lead, 4 inches long, 1/2 inch square, paper cover	Per gross, \$
Half gross in a box.	

# COPPER BALLS.



Diameter, inches.....	4	5	6	7	8	10
Each .....	\$					

# SOLDERING COPPERS.



Weight per pair, 1½ pounds.....	Per lb., \$
Weight " 2, 3, 4, 5, 6 and 7 pounds.....	"

# METALS.

## Sheet Copper.

Size, 30x60 inches, 10 to 90 lbs. per sheet.....	Per lb., \$
--	-------------

## Sheet Brass.

14 to 18 inches wide, Stubs' Gauge, Nos. 14 to 24.....	Per lb., \$
--	-------------

## Bar Copper.

¾ to 5⁄8 inches diamter.....	Per lb., \$
------------------------------	-------------

## Ingot Copper.

Lake Superior.....	Per lb., \$
--------------------	-------------

## Antimony.

French Star.....	Per lb., \$
------------------	-------------

## Babbitt Metal.

54 K.....	Per lb., \$
Extra.....	"

## Solder.

Extra.....	Per lb., \$
No. 1.....	"
No. 2.....	"

## Bar Lead.

Soft.....	Per lb., \$
-----------	-------------

## Pig Lead.

Richmond.....	Per lb., \$
---------------	-------------

## PUMPS.



## Revolving Stand.

No. 1.	Bore	$2\frac{1}{4}$ inches,	Stroke	5	inches, for	Lead or Iron Pipe,	$\frac{3}{4}$ or 1	inches.....	Each, \$4 00
No. 2.	"	$2\frac{1}{2}$	"	5	"	"	"	1 $\frac{1}{4}$	" 4 50
No. 3.	"	$2\frac{3}{4}$	"	$6\frac{3}{4}$	"	"	"	1 $\frac{1}{4}$ " 1 $\frac{1}{2}$	" 5 00
No. 4.	"	3	"	$6\frac{3}{4}$	"	"	"	1 $\frac{1}{2}$ " 1 $\frac{3}{4}$	" 5 50
No. 5.	"	$3\frac{1}{4}$	"	$7\frac{1}{4}$	"	"	"	1 $\frac{3}{4}$ " 2	" 6 50
No. 6.	"	$3\frac{1}{2}$	"	$7\frac{1}{4}$	"	"	"	2 " 2 $\frac{1}{4}$	" 8 00

All these Pumps are furnished with Iron Couplings and Brass Thread Tube, adapted to either Iron or Lead Pipe.

# PUMPS.



## Double-Acting Suction and Force.

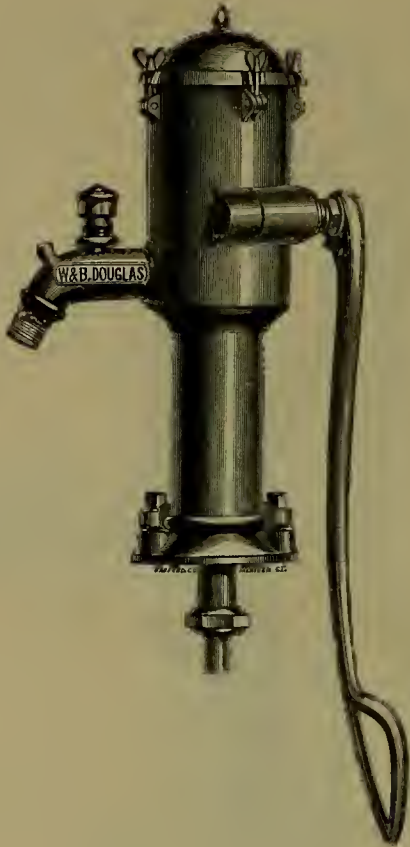
With Air-Barrel and Cock.

No. 1A.	Bore $2\frac{1}{2}$ inches,	Stroke $4\frac{3}{4}$ inches,	for Lead or Iron Pipe, 1 inch	Each, \$18 50
No. 2A.	" $2\frac{1}{2}$ "	" $5\frac{1}{4}$ "	" " " $1\frac{1}{4}$ "	" 21 50
No. 3A.	" $2\frac{3}{4}$ "	" $6\frac{1}{4}$ "	" " " $1\frac{1}{4}$ "	" 24 00
No. 4A.	" 3 "	" $6\frac{3}{4}$ "	" " " $1\frac{1}{2}$ "	" 26 50
No. 5A.	" $3\frac{1}{4}$ "	" 7 "	" " " $1\frac{1}{2}$ or $1\frac{3}{4}$ "	" 30 00
No. 6A.	" $3\frac{1}{2}$ "	" 8 "	" " " $1\frac{1}{2}$ or $1\frac{3}{4}$ "	" 33 50

All these Pumps are furnished with Iron and Brass Thread Tube, adapted to either Iron or Lead Pipe.



PUMPS.



Pendulum Force or Litt.

No. 0.	Bore $2\frac{1}{2}$ inches,	Stroke $4\frac{1}{2}$ inches,	for 1	inch Lead or Iron Pipe	.....	Each, \$10 00
No. 1.	" $3\frac{1}{4}$	" 6	" $1\frac{1}{4}$	" " " " " " " "	.....	" 12 00
No. 2.	" 4	" $7\frac{1}{4}$	" $1\frac{1}{2}$	" " " " " " " "	.....	" 20 00



Fountain.

Complete, with Hose, Nozzle and Sprinkler

Small Size.....	Each, \$6 00
Large Size.....	" 7 50

## LOWER CHECK VALVE.



For $1\frac{1}{4}$ inch Pipe.....	Each, \$1 50
For $1\frac{1}{2}$ ".....	" 1 75
For 2 ".....	" 2 25
For $2\frac{1}{2}$ ".....	" 2 75
For 3 ".....	" 3 75

## DRIVE WELL POINTS.



For Pipe, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each.....	\$4 50	6 00	11 00

## PUMP CYLINDERS.

Seamless Brass Tube, Iron Attachment.

Size, Inches.	For Pipe.	10 Inches Long	12 Inches Long	14 Inches Long.
$2\frac{1}{4}$ inches.....	$1\frac{1}{4}$ inches.....	Each, \$7 75	8 25	9 00
$2\frac{1}{2}$ ".....	$1\frac{1}{4}$ ".....	" 8 00	8 50	9 25
3 ".....	$1\frac{1}{4}$ ".....	" 9 00	9 50	10 25
$3\frac{1}{2}$ ".....	$1\frac{1}{2}$ ".....	" 10 50	11 25	12 25
4 ".....	2 ".....	" 14 00	15 00	15 75

## PIPE.

### Wrought Iron.

Inside diam., in.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Weight per ft., lbs.....	.422	.561	.845	1.126	1.670	2.258	2.694	3.667	5.774	7.547	9.05	10.728
Per foot, Black.....	\$											
Per " Galvanized,												

Pipe dipped in Asphaltum and Coal Tar to order.

### Sheet Iron.

For Mining and Irrigating purposes, of all sizes and gauges of iron, made to order. Prices furnished upon application.

## PIPE FITTINGS.



Cross.



Reducers.



Elbow.



Tee.



Plain Flange.



Return Bend.

## Pound Fittings.

BLACK.

Class 1.

Elbows and Tees, 2 inches and larger.....Cents per pound,

Class 2. Advance 2 cents on Class 1.

Elbows and Tees,  $\frac{3}{4}$  to  $1\frac{1}{2}$  inches, inclusive.....Street Elbows,  $1\frac{1}{4}$  inches and larger.....Caps and Crosses,  $1\frac{1}{4}$  inches.....

Return Bends, 1 inch and larger.....

Reducers and Couplings,  $1\frac{1}{4}$  inches and larger.....

Plain Flanges, all sizes.....

Class 3. Advance 4 cents on Class 1.

Elbows and Tees,  $\frac{3}{8}$  and  $\frac{1}{2}$  inch, inclusive.....Street Elbows,  $\frac{3}{8}$  to 1 inch, inclusive.....Caps and Crosses,  $\frac{3}{8}$  to 1 inch, inclusive.....Return Bends,  $\frac{3}{8}$  to  $\frac{3}{4}$  inch, inclusive.....Reducers and Couplings,  $\frac{3}{8}$  to 1 inch, inclusive.....

Drop Elbows and Drop Tees, all sizes.....

Class 4. Advance 12 cents on Class 1.

Elbows, Tees, Caps, Sockets and Crosses,  $\frac{1}{8}$  and  $\frac{1}{4}$  inch.....

GALVANIZED.

Advance on respective Classes.....Per lb., 5 cents.



Union.



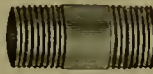
Plug.



Bushing.



Short Nipple.



Long Nipple.



Coupling.



Cap.



Lock Nut

## Piece Fittings.

BLACK.

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Unions.....Each, \$o	15	o 15	o 20	o 25	o 30	o 40	o 50	o 75	1 50	2 50	4 00	5 00
Plugs....."	5	5	5	6	8	10	12	15	30	50	75	1 00
Bushings....."	6	6	6	8	10	12	15	20	35	60	80	1 25
Caps....."	5	5	5	10	12	15	25	30	50	70	90	1 25
Nipples, Short....."	6	6	8	10	12	15	20	25	60	75	1 00	1 25
Nipples, Long....."	8	8	10	12	15	20	25	35	75	1 00	1 25	1 75
Lock Nuts... .."	5	5	5	6	8	10	12	15	30	50	75	1 00
Wro't Sockets....."	6	8	10	12	15	20	25	30	50	70	90	1 25

GALVANIZED.

Double above List.



## Union Flanges.

With Bolts.

Size, inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Per Pair.....\$1 00	1 25	1 50	1 75	2 00	2 75	3 75	4 75	

# PLAIN BIBBS.



Rough.

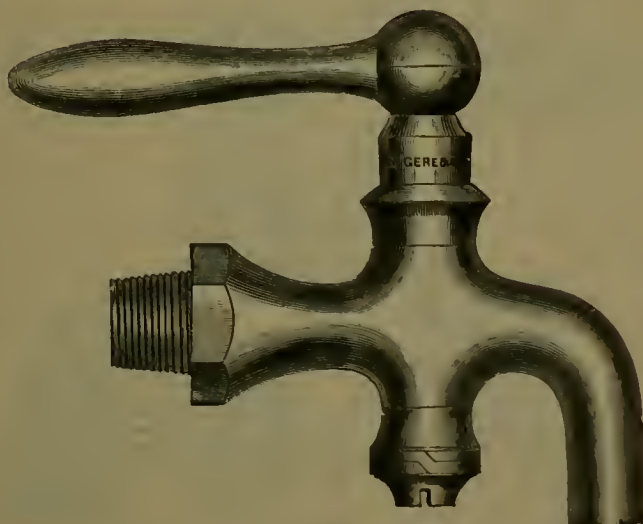
Screwed for Iron Pipe, without Shoulder.

## ROUGH.

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per dozen.....	\$11 00	14 00	17 00	23 00	35 00

## FINISHED.

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per dozen.....	\$12 00	15 50	19 00	26 00	39 00



Finished.

Screwed for Iron Pipe, with Shoulder.

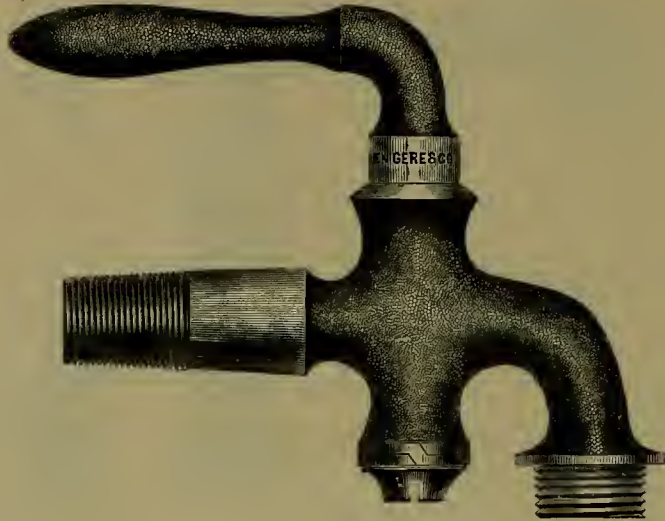
## ROUGH.

Size, inches.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Per dozen.....	\$14 00	17 00	23 00	35 00	50 00	78 00	160 00

## FINISHED.

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per dozen.....	\$12 00	15 50	19 00	26 00	39 00

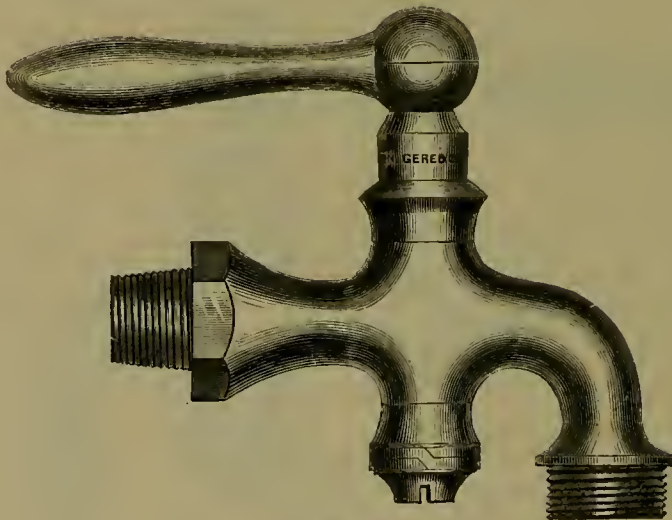
# HOSE BIBBS.



Rough.

## Screwed for Iron Pipe, without Shoulder.

		ROUGH			
Size, inches.....		$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per dozen.....		\$15 00	18 00	25 00	38 00
		FINISHED.			
Size, inches.....		$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per dozen.....		\$16 50	20 00	28 00	42 00



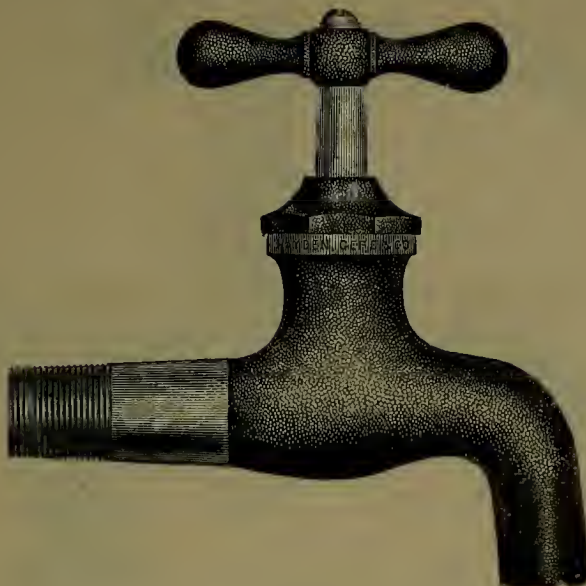
Finished.

## Screwed for Iron Pipe, with Shoulder.

		ROUGH					
Size, inches.....		$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Per dozen.....		\$15 00	18 00	25 00	38 00	54 00	84 00
		FINISHED.					
Size, inches.....		$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Per dozen.....		\$16 50	20 00	28 00	42 00	54 00	84 00



# COMPRESSION PLAIN BIBBS.



Rough.

## Screwed for Iron Pipe without Shoulder.

ROUGH.				FINISHED.					
Size, inches...	1/2	5/8	3/4	1	Size, inches...	1/2	5/8	3/4	1
Per dozen.....	\$10 50	12 00	19 00	33 00	Per dozen.....	\$11 00	13 00	20 00	37 00

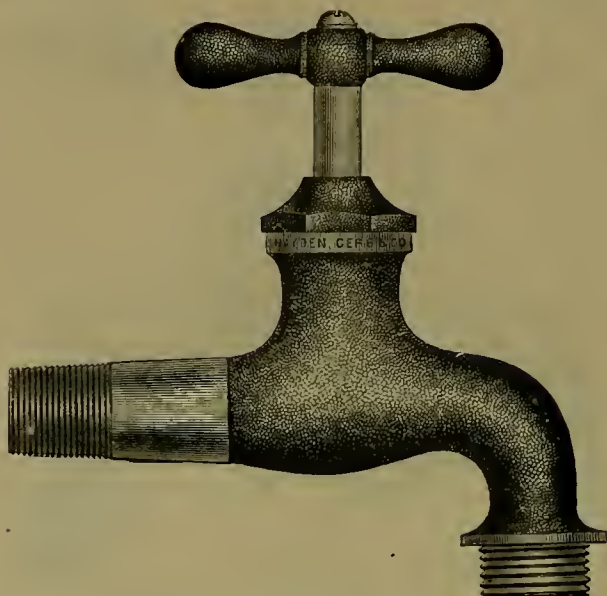


Finished.

## Screwed for Iron Pipe, with Shoulder.

ROUGH				FINISHED.						
Size, inches...	1/2	5/8	3/4	1	Size, inches	5/8	1/2	5/8	3/4	1
Per dozen...	\$10 50	12 00	19 00	33 00	Per dozen.	\$10 00	11 00	13 00	20 00	37 00

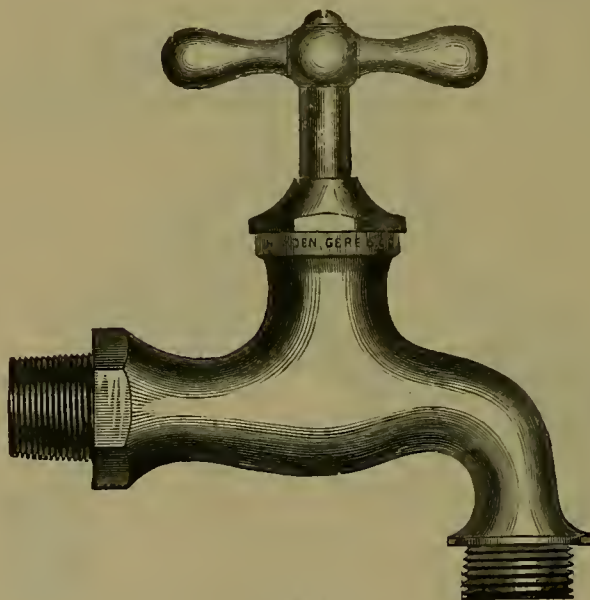
## COMPRESSION HOSE BIBBS.



Rough.

Screwed for Iron Pipe, without Shoulder.

ROUGH.					FINISHED.				
Size, inches...	1/2	5/8	3/4	1	Size, inches...	1/2	5/8	3/4	1
Per dozen....	\$11 50	13 00	21 00	36 00	Per dozen....	\$12 00	14 00	22 00	40 00



Finished.

Screwed for Iron Pipe, with Shoulder.

ROUGH.					FINISHED.				
Size, inches...	1/2	5/8	3/4	1	Size, inches...	1/2	5/8	3/4	1
Per dozen....	\$11 50	13 00	21 00	36 00	Per dozen....	\$12 00	14 00	22 00	40 00

# STOPS.



Rough.

## Lever Handle, for Lead Pipe.

### ROUGH.

Size, inches.....	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1
Per dozen.....	\$11 00	13 00	17 50	26 00

### FINISHED.

Size, inches.....	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1
Per dozen.....	\$15 00	18 50	25 00	37 00



Finished.

## Compression, for Lead Pipe.

### FINISHED.

With or without Waste.....	$\frac{1}{2}$	$\frac{3}{4}$
Per dozen.....	\$11 00	19 50

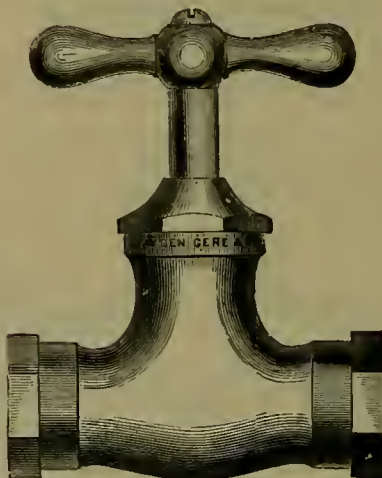
## STOPS.



Rough.

## Lever Handle, Screwed for Iron Pipe.

ROUGH.				
Size, inches.....	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1
Per dozen.....	\$12 00	14 00	19 00	28 00
FINISHED.				
Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$		
Per dozen.....	\$15 00			26 50



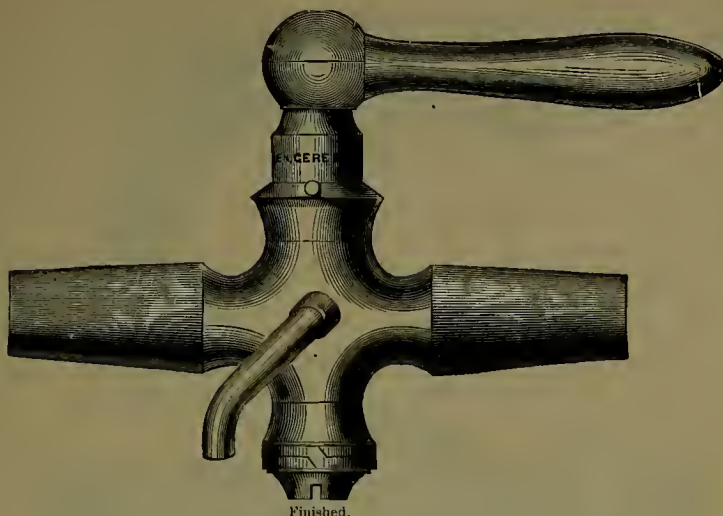
Finished.

## Compression, Screwed for Iron Pipe.

ROUGH. With or without Waste.		FINISHED.	
Size, inches.....	$\frac{1}{2}$	Size, inches.....	$\frac{3}{4}$
Per dozen.....	\$11 50	Per dozen.....	\$12 00
	20 00		21 00

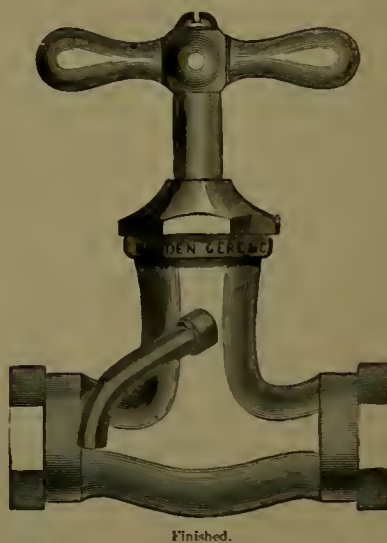
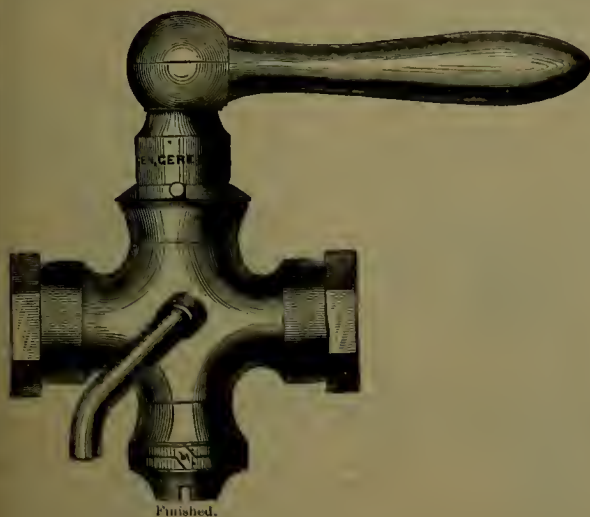


# SHOWER BATH COCKS.



## Lever Handle, for Lead Pipe.

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$
Per dozen.....	\$16 50	26 50



## Screwed for Iron Pipe.

### LEVER HANDLE

Size, inches. ....	$\frac{1}{2}$	$\frac{3}{4}$
Per dozen.....	\$17 50	28 00

### COMPRESSION.

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$
Per dozen.....	\$14 50	24 50



# BALL COCKS.



## Plain.

Screwed for Iron Pipe, with Shoulder.

Size, inches .....	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1
Per dozen .....	\$12 00	15 00	19 50	30 00



## Compression.

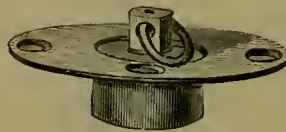
Screwed for Iron Pipe, with Shoulder.

Size, inches .....	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{4}$	1
Per dozen .....	\$10 50	12 00	19 00	33 00

# PLUGS.



Sink or Bath.

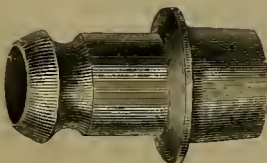


Wash Tray.



Rubber.

Size inches. $1\frac{1}{4}$	$1\frac{1}{2}$	2	Size, inches. $1\frac{1}{4}$	Per dozen.....\$
Per dozen.. \$3 50	4 50	8 00	Per dozen.....\$5 00	



Bath Waste and Washers.



Trap Screws.



Strainers.

Size, inches..... $1\frac{1}{4}$	Size, inches..... 1	2	Size, inches. 2	$2\frac{1}{2}$	3
Per dozen.....\$7 50	Per dozen.....\$2 75	7 00	Per dozen..\$1 00	1 25	1 50

## HOSE PIPES.



### Plain, Screw Tip.

Short, Cast Brass.

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Length, inches.....	8	8	12	12	12
Per dozen.....	\$7 00	9 00	17 00	20 00	32 00



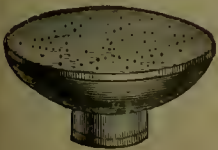
### Cock on Large End.

Short, Cast Brass.

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Length, inches.....	8	8	15	18	18
Per dozen.....	\$12 00	14 00	34 00	65 00	.....

### Magic.

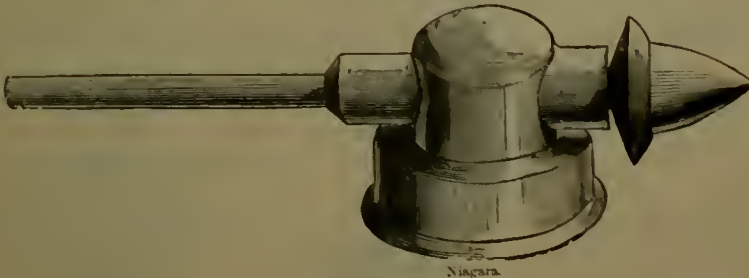
Size, inches.....	$\frac{3}{4}$	1
Per dozen.....	\$	



## HOSE SPRINKLERS.

$1\frac{1}{2}$ and 2 inches diameter, for $\frac{3}{4}$ and 1 inch Hose Pipes.....	Per dozen, \$
$2\frac{1}{2}$ " 3 inches diameter, " $1\frac{1}{4}$ inch Hose Pipes.....	"
4 inches diameter for $\frac{3}{4}$ inch Hose Couplings.....	"

## LAWN SPRINKLER.



Niagara.

### Niagara.

Size, inches.....	$\frac{3}{4}$	1
Per dozen.....	\$9 00	12 00

### Perfection.

Size, $\frac{3}{4}$ inches.....	Per dozen, \$9 00
---------------------------------	-------------------

## HOSE COUPLINGS.



Brass.

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3
Per dozen.....	\$2 40	2 40	4 40	10 00	14 00	24 00	30 00	40 00	70 00

 $1\frac{1}{4}$  inches and larger have Lugs for Spanner.

## HOSE MENDERS.



Size, inches.....	$\frac{3}{4}$	1
Per dozen.....	\$	

## HOSE REDUCERS.

Size, inches.....	1 to $\frac{3}{4}$	$1\frac{1}{4}$ to $\frac{3}{4}$	$1\frac{1}{4}$ to 1	$1\frac{1}{2}$ to $\frac{3}{4}$	$1\frac{1}{2}$ to 1	$1\frac{1}{2}$ to $1\frac{1}{4}$	2 to $1\frac{1}{4}$	2 to $1\frac{1}{2}$
Per dozen.....	\$							

## GARDEN VALVES.



Straight and Bent Nose.

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each .....	\$0 95	1 30	1 70	2 60	3 60	5 60

# VALVES.



Screwed End.



Flanged End.



Angle Valve.

## Globe.

### STEAM, METAL.

Size, inches.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each	\$0 60	75	95	1 30	1 70	2 60	3 60	5 60	11 25	16 00	28 00	40 00
"Extra," each.	80	95	1 25	1 80	2 50	3 75	5 25	7 75	14 00	19 00	.....	.....

### IRON SHELL, BRASS MOUNTED.

Size, inches.	3 1/2	4	1 1/2	2	2 1/2	3
Each	\$16 00	20 00	3 50	4 50	7 50	10 50

### IRON SHELL, BRASS MOUNTED, FLANGED.

Size, inches.	2 1/2	3	3 1/2	4
Each.	\$9 00	12 50	18 50	23 00

## Angle.

### STEAM METAL.

Size, inches.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each	\$0 60	75	95	1 30	1 70	2 60	3 60	5 60



## Safety.

### STEAM, METAL.

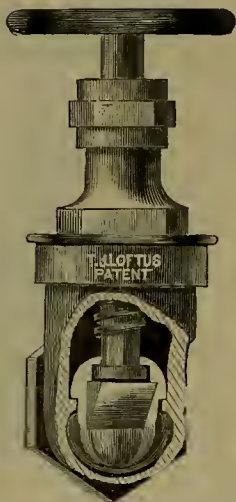
Size, inches.	3/4	1	1 1/4	1 1/2	2
Each	\$2 80	3 80	5 50	7 00	11 00

### IRON SHELL, BRASS MOUNTED

Size, inches.	1	1 1/4	1 1/2	2
Each	\$2 75	3 75	4 75	6 50



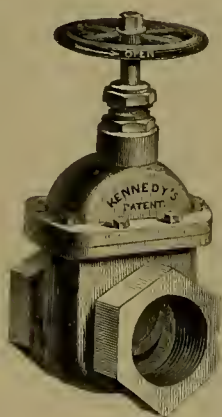
## STRAIGHT WAY VALVES.



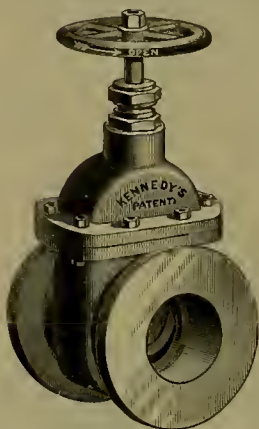
## Steam Metal.

For Water, Steam and Gas.

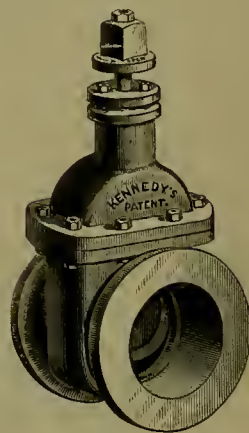
Size, inches....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	\$1 00	1 00	1 20	1 75	2 50	3 50	5 00	7 50	15 00	22 00



Screwed Ends.



With Flanges.



Hub Ends.

## Iron Shell, Brass Mounted.

For Water, Steam and Gas.

## SCREWED ENDS AND WITH FLANGES.

Size, inches.....	3	$3\frac{1}{2}$	4	5	6	8	10
Each.....	\$15 00	18 00	20 00	25 00	30 00	47 00	66 00
Size, inches.....	12	14	16	18	20	22	24
Each.....	\$86 00	126 00	180 00	232 00	290 00	315 00	395 00

## HUB ENDS.

Size, inches.....	3	$3\frac{1}{2}$	4	5	6	7	8
Each.....	\$15 00	18 00	20 00	25 00	30 00	40 00	47 00
Size, inches..	10	12	14	16	18	20	24
Each.....	\$66 00	86 00	120 00	170 00	220 00	275 00	375 00



## CHECK VALVES.



Steam Metal. Horizontal.



Steam Metal. Perpendicular.

### Horizontal, Steam Metal.

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Each .....	\$0 50	0 55	0 80	1 10	1 40	2 25	3 10	4 90	10 00

#### EXTRA HEAVY.

Size, inches.....	3/4	1	1 1/4	1 1/2	2
Each .....	\$1 70	2 20	3 25	4 50	6 50

### Perpendicular, Steam Metal.

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Each .....	\$0 50	0 55	0 80	1 10	1 40	2 25	3 10	4 90	10 00

## COCKS.



Service Cocks.



Steam Cocks.



Iron Cocks.

### Service.

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each .....	\$0 60	0 70	0 80	1 15	1 50	2 20	3 20	5 00	10 00	16 00

### Steam.

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each .....	\$0 75	0 85	1 15	1 65	2 30	3 60	5 00	7 25

### Iron.

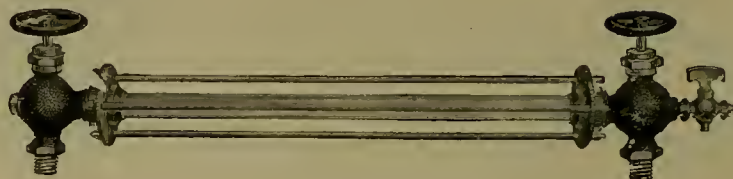
Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each .....	\$0 70	0 90	1 35	1 90	2 30	4 25	6 25	10 00	13 00

## WATER GAUGES.



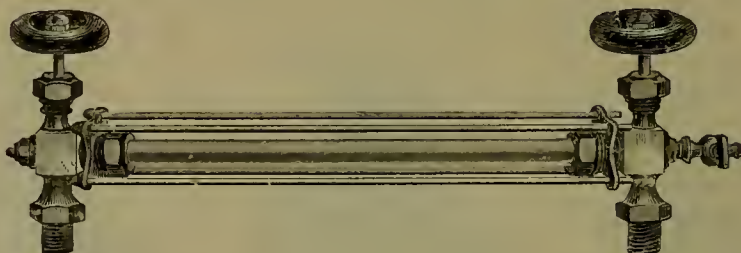
Two Rods.

Rough, for  $\frac{1}{2}$  inch Pipe, Glass  $\frac{5}{8} \times 12$ . . . . . Each, \$



Three Rods.

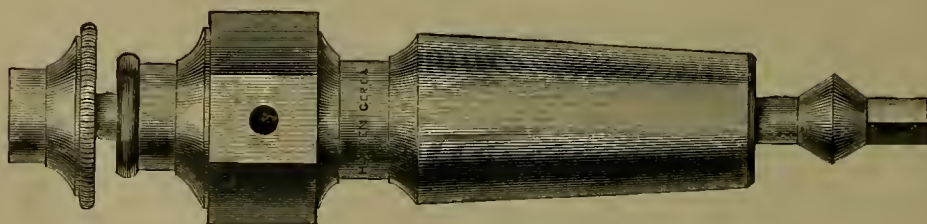
Rough, for  $\frac{1}{2}$  inch Pipe, Glass  $\frac{1}{2} \times 12$ . . . . . Each, \$



Four Rods.

Finished, for  $\frac{1}{2}$  inch Pipe, Glass  $\frac{5}{8} \times 12$ , Wood Wheels. . . . . Each, \$

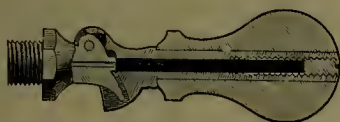
## GAUGE COCKS.



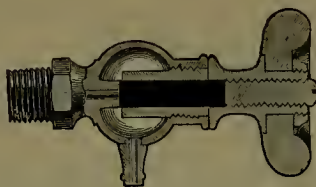
Mississippi.

Diameter of Blank Shanks, inches. . . . .	$\frac{3}{4}$	$\frac{5}{8}$	1	$1\frac{1}{8}$
Per dozen. . . . .	\$10 50	14 00	18 00	21 00

# GAUGE COCKS.



Ball.



Wheel Handle.

## Ball.

Felthousen's Patent.

With  $1\frac{1}{8}$  inch Blank Shanks. .... Per dozen, \$18 00

## Wheel Handle.

Felthousen's Patent.

Diameter of Blank Shanks, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	$1\frac{1}{8}$
Per dozen.....	\$15 60	16 80	18 00



Fig. 629. Full Size.

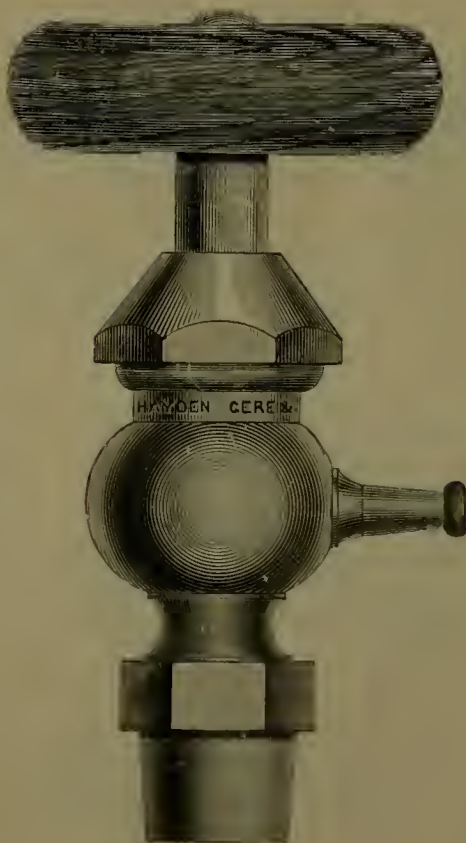


Fig. 630. Full Size.

## Compression.

$\frac{7}{8}$ inch Blank Shanks.....	Fig 629.	Fig 630.
Per dozen.....	\$13 50	15 00



## AIR COCKS.

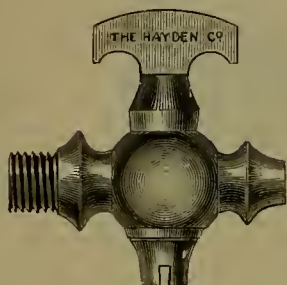


Fig. 573.  
 $\frac{1}{8}$  and  $\frac{1}{4}$  inch. Per dozen, \$4 50

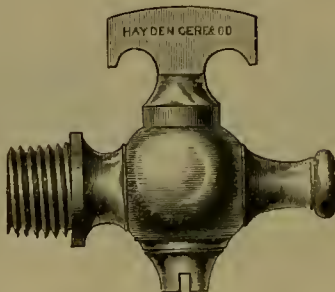


Fig. 574.  
 $\frac{1}{4}$  inch. Per dozen, \$5 00

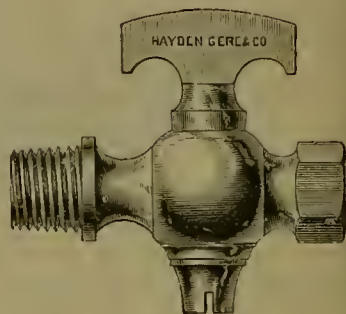


Fig. 582.  
 $\frac{1}{8}$  and  $\frac{1}{4}$  inch. Per dozen, \$7 00

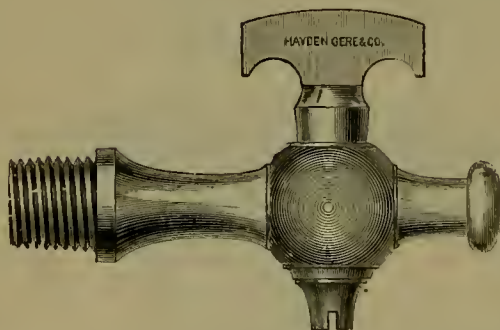


Fig. 578.  $\frac{1}{4}$  inch. Per dozen, \$8 00

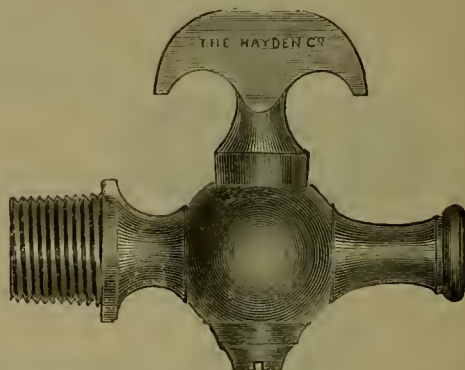


Fig. 575. Inches.  $\frac{3}{8}$   $\frac{1}{2}$   
 Per dozen. \$7 00 7 50

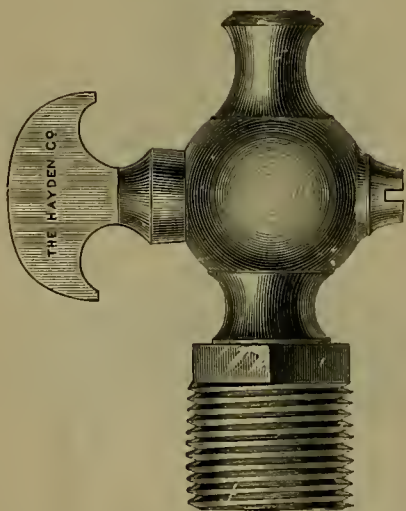


Fig. 576.  $\frac{3}{4}$  inch. Per dozen, \$12 00

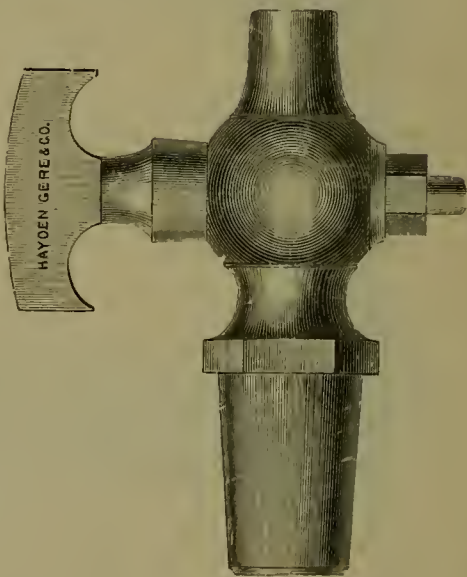


Fig. 577.  $\frac{1}{8}$  inch Blank Shank. Per dozen, \$13 00

Above cuts are full size.

# AIR COCKS.

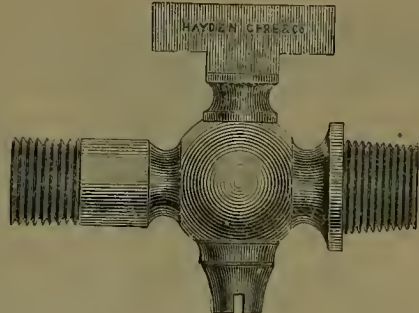
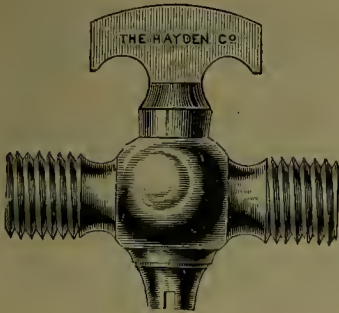


Fig. 583.  $\frac{3}{8}$  and  $\frac{1}{4}$  inch..... Per dozen, \$5 50 | Fig. 581.  $\frac{3}{8}$  and  $\frac{1}{4}$  inch..... Per dozen, \$8 00

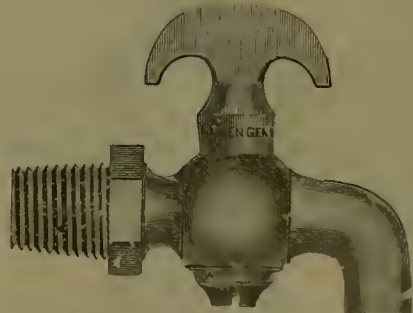
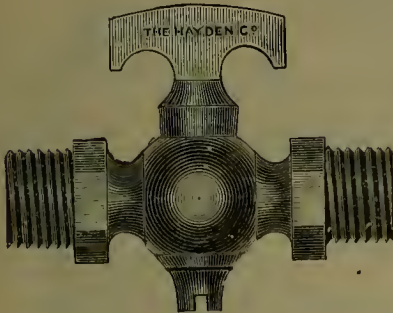


Fig. 584.  $\frac{3}{8}$  inch..... Per dozen, \$10 00 | Fig. 586.  $\frac{1}{4}$  inch..... Per dozen, \$7 00

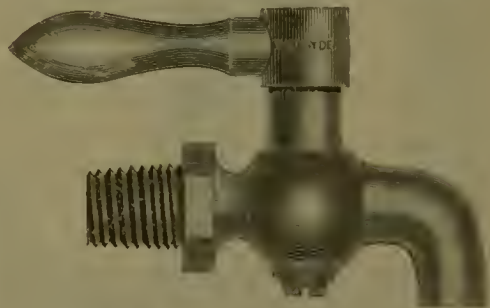
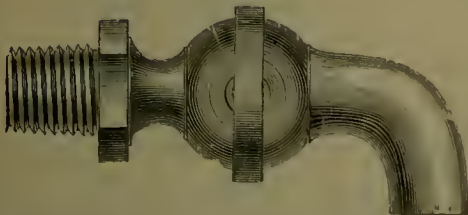


Fig. 590.  $\frac{1}{4}$  inch..... Per dozen, \$7 00 | Fig. 588.  $\frac{1}{4}$  inch..... Per dozen, \$11 00

## COMPRESSION AIR VALVES.

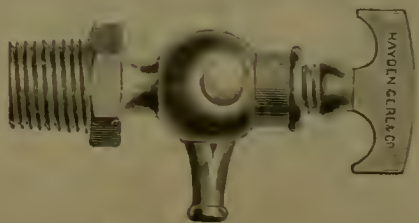


Fig. 568.  $\frac{1}{4}$  inch..... Per dozen, \$4 75 | Fig. 570.  $\frac{1}{4}$  inch..... Per dozen, \$5 00

Above cuts are full size.



## CYLINDER COCKS.

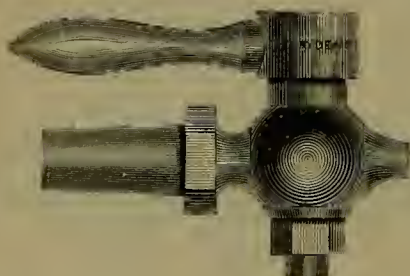


Fig. 600.  $\frac{3}{8}$  inch Blank Shank . . . Per dozen, \$6 00 | Fig. 601.  $\frac{1}{2}$  inch Blank Shank . . . Per dozen, \$7 50

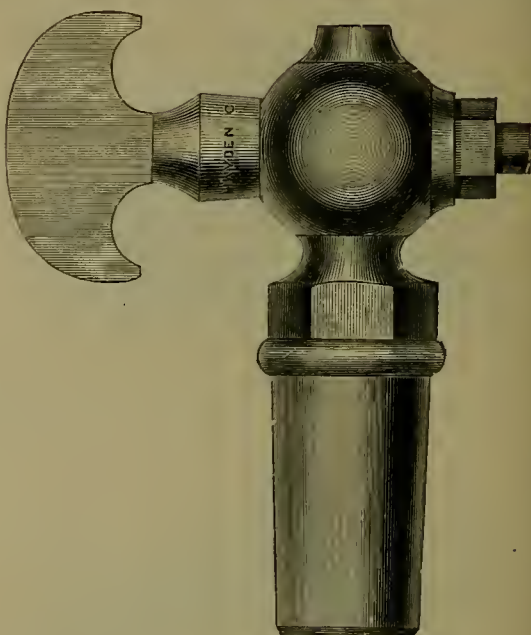
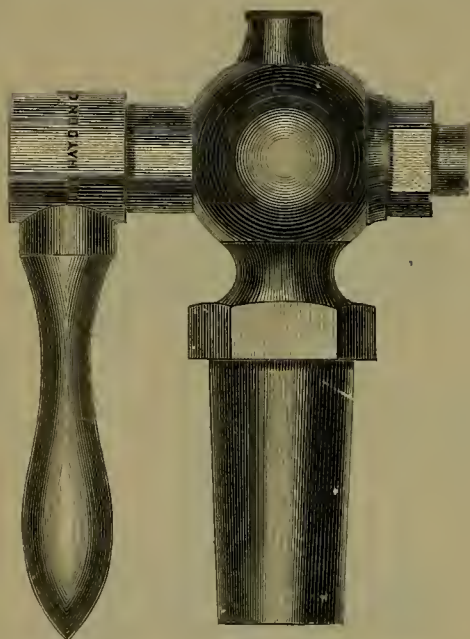


Fig. 603.  $\frac{3}{4}$  inch Blank Shank . . . Per dozen, \$12 00 | Fig. 599.  $\frac{7}{8}$  inch Blank Shank . . . Per dozen, \$13 00

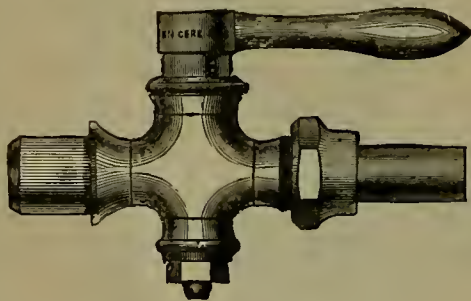


Fig. 611.

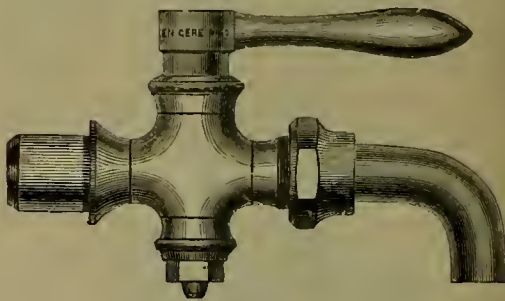
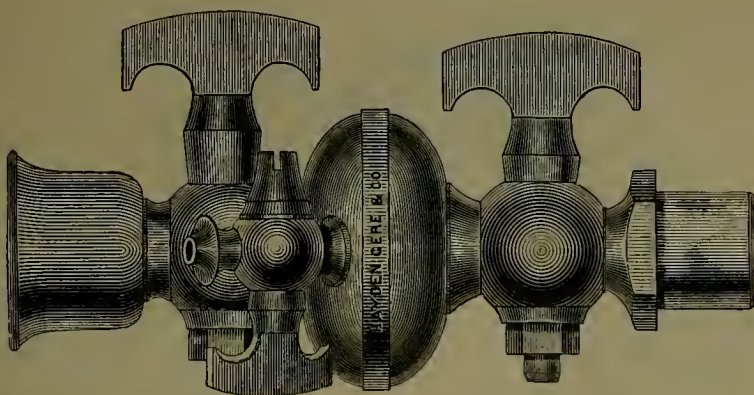


Fig. 615.

Diameter of Opening, inch . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	Diameter of Opening, inch . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Diameter of Blank Shank, inch.	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$	Diameter of Blank Shank, inch.	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$
Per dozen . . . . .	\$6 00	21 00	29 00	Per dozen . . . . .	\$17 00	22 00	31 00

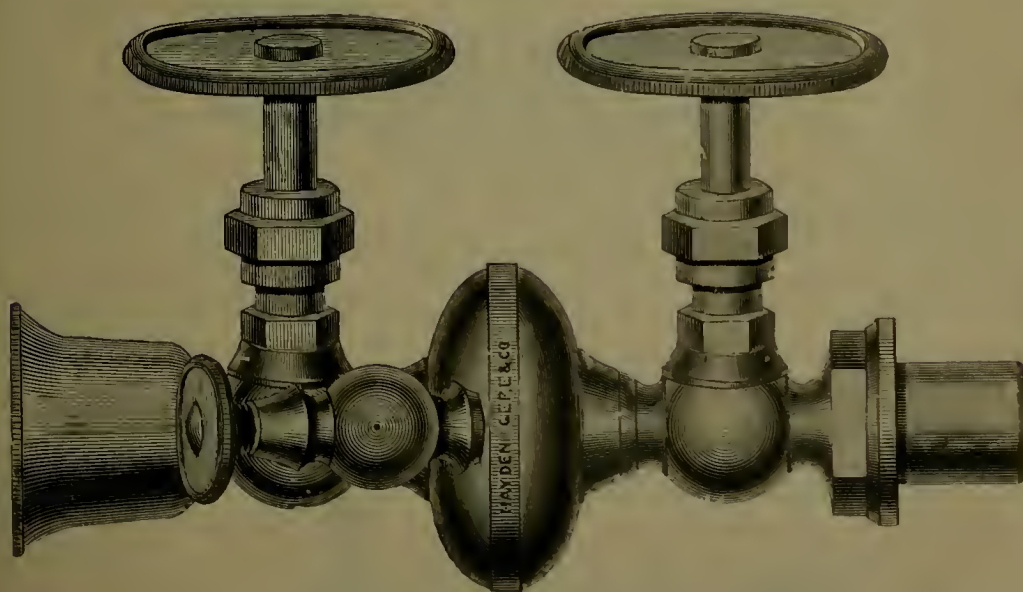
Above cuts are full size.

# OIL CUPS.



Plain.

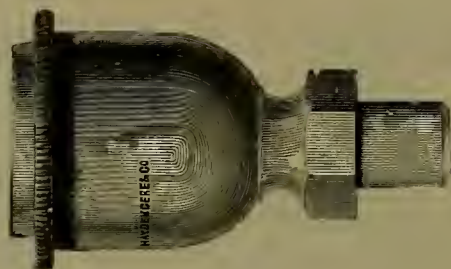
Nos. ....	1	2	3	4	5
Diameter of Globe, inches.....	1½	2	2¼	2½	3
Diameter of Shank, " .....	¾	¾	¾	1⅛	1⅝
Cuts to Iron Pipe, " .....	½	½	½	¾	¾
Each .....	\$3 00	3 75	4 50	5 25	6 00



Compression.

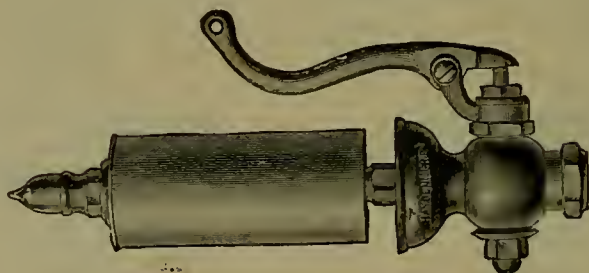
Nos. ....	1	2	3	4
Diameter of Globe, inches.....	2	2¼	2½	3
Diameter of Shank, " .....	¾	¾	1⅛	1⅝
Cuts to Iron Pipe, " .....	½	½	¾	¾
Each .....	\$4 25	4 75	5 50	6 50

## PLAIN OIL CUPS.



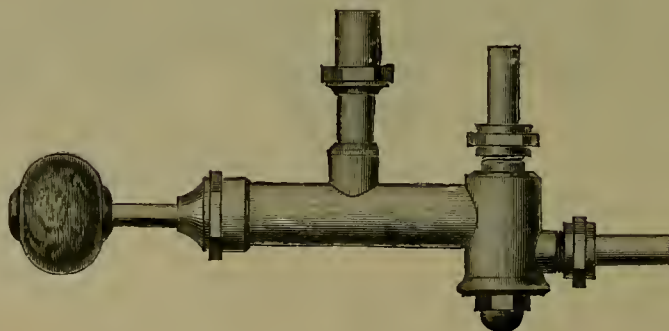
Nos .....	1	2	3	4	5	6	7	8	9	10	11
Diameter, inches....	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$
Diam. Shank, inches,	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$1\frac{1}{8}$
Cuts to Iron Pipe, in.,	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$
Each .....	\$0 24	0 28	0 33	0 38	0 44	0 56	0 75	0 95	1 20	1 60	2 10

## STEAM WHISTLES.



Diameter of Bell, inches....	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
For Iron Pipe, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each .....	\$4 00	4 25	5 50	7 00	9 00	12 00	19 00	25 00

## OIL PUMPS.



Nos .....	1	2
Each .....	\$10 00	12 00



# PATENT OIL CUPS.

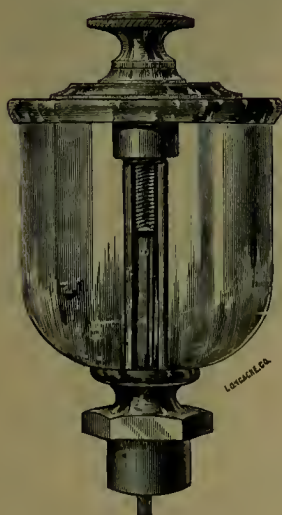


Fig. 3B.



Fig. 3A.

Fig. 3B. Lonergan's.

A very good Crank Pin Cup for Engines.

No. 20.	Diameter	$1\frac{1}{2}$ inches,	height	$2\frac{7}{8}$ inches,	capacity	$\frac{1}{2}$ ounce.....	Per dozen, \$16 00
No. 21.	"	2	"	$3\frac{1}{8}$	"	$\frac{5}{8}$ " .....	" 20 00
No. 22.	"	$2\frac{1}{4}$	"	$3\frac{1}{2}$	"	$1\frac{1}{4}$ " .....	" 24 00
No. 23.	"	3	"	$4\frac{1}{2}$	"	$3\frac{1}{2}$ " .....	" 32 00
No. 24.	"	$3\frac{1}{2}$	"	5	"	8 " .....	" 40 00

Fig. 3A. Lonergan's.

For Small Engines, Agricultural Machinery, Shafting, Etc.

No. 41.	Diameter	$1\frac{1}{2}$ inches,	height	$2\frac{1}{4}$ inches,	capacity	1 ounce.....	Per dozen, \$12 00
No. 42.	"	$2\frac{1}{8}$	"	$4\frac{1}{4}$	"	3 " .....	" 18 00
No. 43.	"	$2\frac{1}{2}$	"	$5\frac{1}{4}$	"	5 " .....	" 24 00
No. 44.	"	3	"	6	"	8 " .....	" 30 00

PATENT OIL CUPS.

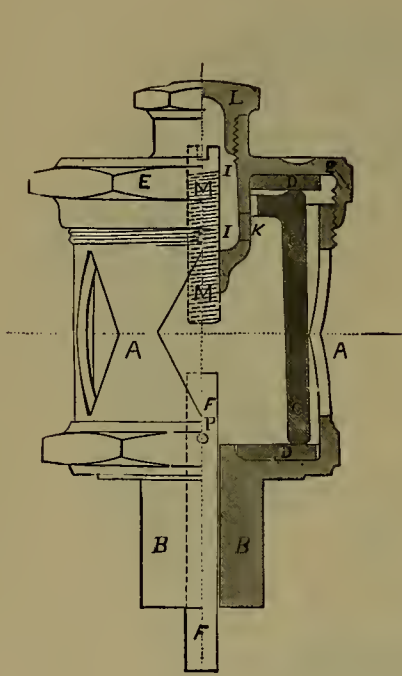


Fig. 1.

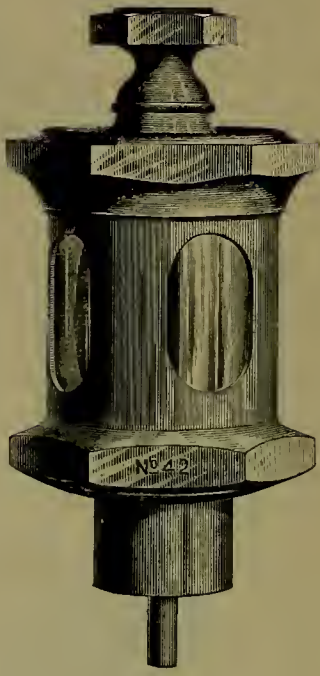


Fig. 5.

Fig. 1. Lonergan's.

Suitable for Rotary Motion, and particularly adapted to Locomotive Connecting Rods.

No. 30.	Diameter 1	inche,	height 2 1/8	inches,	capacity 1/4	ounce.	.....	Per dozen, \$24 00
No. 31.	"	1 1/4	"	2 3/4	"	5/8	" .....	" 36 00
No. 32.	"	1 5/8	"	3 1/4	"	1 1/8	" .....	" 48 00
No. 33.	"	1 7/8	"	3 3/4	"	1 5/8	" .....	" 48 00
No. 34.	"	2 1/4	"	4 1/8	"	2 1/2	" .....	" 60 00
No. 35.	"	4 1/2	"	7	"	10	" .....	" 84 00

Fig. 5. Nathan & Dreyfus'.

For the same purpose as Lonergan's Fig. 1.

No. 36.	Diameter 2	inches,	height 3 1/2	inches,	capacity 1	ounces.	.....	Per dozen, \$48 00
No. 42.	"	2	"	4	"	1 1/4	" .....	" 48 00



# PATENT OIL CUPS.

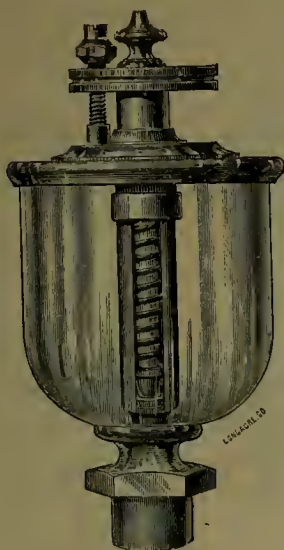


Fig. 4A.

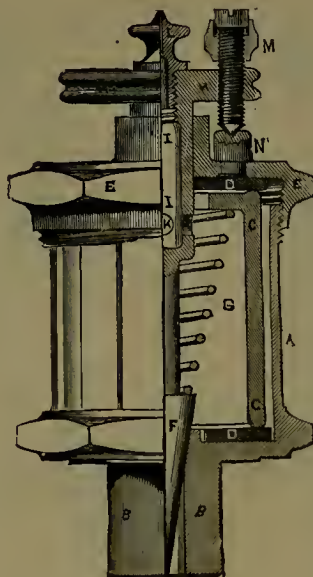


Fig. 2.

Fig. 4A. Lonergan's.

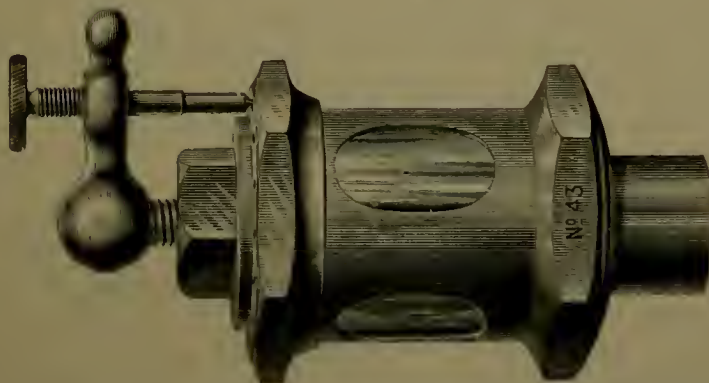
Adapted to Stationary or Marine Engines.

No. 7, small.	Diameter	$2\frac{1}{4}$ inches,	height	$3\frac{1}{2}$ inches,	capacity	$\frac{3}{4}$ ounce.....	Per dozen, \$22 00
No. 7.	"	$2\frac{1}{4}$ "	"	$4\frac{1}{4}$ "	"	$1\frac{1}{4}$ " .....	" 24 00
No. 8.	"	3 "	"	5 "	"	3 "	" 32 00

Fig. 2. Lonergan's.

For Locomotive Guides.

No. $\frac{1}{2}$ .	Diameter	$1\frac{1}{8}$ inches,	height	$2\frac{1}{2}$ inches,	capacity	$\frac{1}{4}$ ounce.....	Per dozen, \$24 00
No. 1.	"	$1\frac{1}{4}$ "	"	$2\frac{3}{4}$ "	"	$\frac{5}{8}$ " .....	" 36 00
No. 2.	"	$1\frac{3}{4}$ "	"	$3\frac{1}{2}$ "	"	1 " .....	" 48 00
No. 3.	"	2 "	"	4 "	"	$1\frac{1}{4}$ " .....	" 48 00



No. 43. Nathan & Dreyfus'.

For Locomotive Guides.

Diameter	2 inches,	height	4 inches,	capacity	$1\frac{1}{4}$ ounces.....	Per dozen, \$54 00
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STEAM CHEST LUBRICATORS.

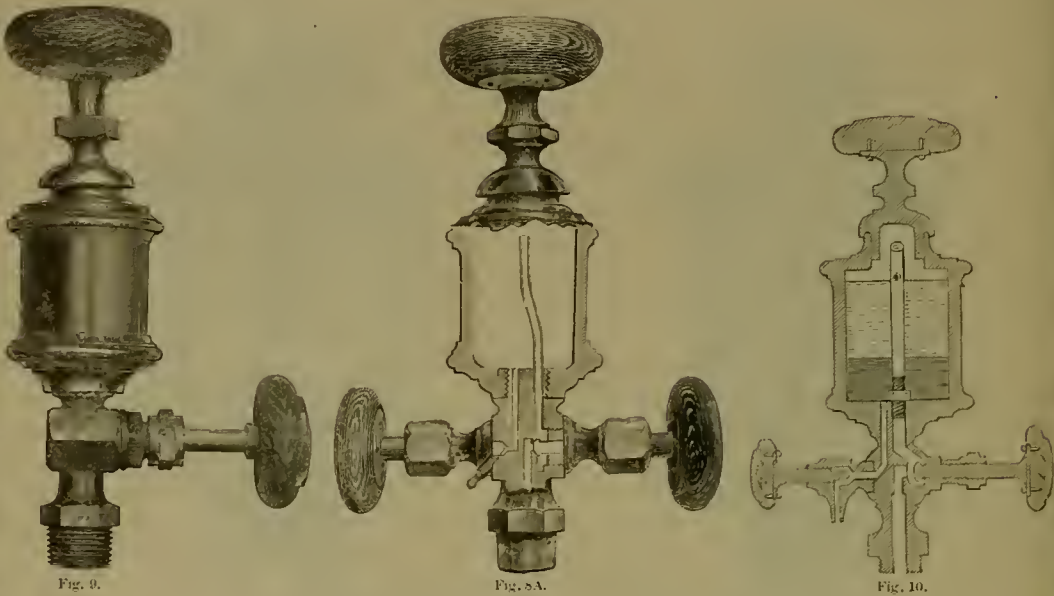


Fig. 9. Lonergan's.

Plain, Direct Acting, may be used for Oil, Tallow or Suet

Diameter 1	inch, height 4 1/2	inches, capacity 24	ounces	.....	Each, \$1 70
Diameter 1 1/4	" " 5	" " 1	"	.....	" 1 90
Diameter 1 1/2	" " 6	" " 1 1/2	"	.....	" 2 20
Diameter 2	" " 7	" " 3	"	.....	" 2 85

Fig. 9A. Lonergan's.

Combination. Will Feed by Condensation or at Will

Diameter 1 1/2	inches, height 6	inches, capacity 1 1/2	ounces	.....	Each, \$3 60
Diameter 2	" " 7	" " 3	"	.....	" 4 50
Diameter 2 1/2	" " 8	" " 6	"	.....	" 5 50
Diameter 3	" " 9	" " 10	"	.....	" 6 50

Fig. 10. Nathan & Dreyfus'.

Feeds by Condensation.

Diameter 1 1/2	inches, height	inches, capacity 1/8	pint	.....	Each, \$6 00
Diameter 2	" " "	" " 1/5	"	.....	" 8 00
Diameter 2 1/2	" " "	" " 1/3	"	.....	" 10 00
Diameter 3	" " "	" " 1/2	"	.....	" 12 00

## STEAM GAUGES.



### Bourdon Spring.

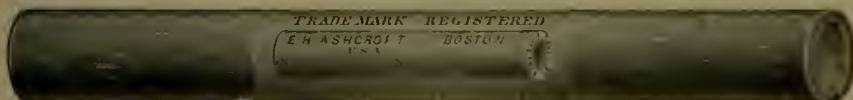
Iron Case, 5	inch Dial,	O. G. Spun Brass Ring.	Each, \$6 00
Iron "	5½	" " Cast "	" 8 00
Iron "	6	" " " "	" 12 00
Brass "	5½	" " " "	" 12 00
Brass "	6	" " " "	" 16 00

### Lane's Improved Spring.

Composition Case, 6¾ inch Dial, O. G. Cast Brass Ring.	Each, \$22 00
--	---------------

These are particularly adapted to Locomotives.

## WATER GAUGE GLASSES.



Length, inches.	10	11	12	13	14	15	16	17	18
Diameter ½ inch, per dozen	\$4 80	4 80	5 40	5 40	6 00	6 60	7 20	7 80	8 40
Diameter 5/8 " " "	4 80	4 80	5 40	5 40	6 00	6 60	7 20	7 80	8 40
Diameter ¾ " " "	6 60	6 60	6 60	6 60	7 20	7 20	7 80	8 40	9 00

### Gaskets.

Flat.	Per dozen, \$	Round.	Per dozen, \$
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## GLASSES FOR PATENT OIL CUPS.

Nos.	12	1	2	3	7 small	7	8	20	21
Per dozen.	\$1 25	1 50	2 50	2 75	3 50	3 50	5 00	2 00	3 00
Nos.	22	23	24	30	31	32	33	34	35
Per dozen.	\$3 50	5 00	8 00	1 25	1 50	2 50	2 75	3 50	8 00
Nos.	36	41	42	42 N. & D.	43	43 N. & D.	44	....	....
Per dozen.	\$6 00	2 50	3 00	2 75	4 00	2 75	5 00	....	....

CORK WASHERS for above kept in stock.

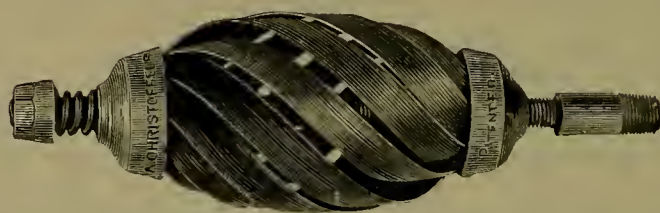
## TUBE BRUSHES.



## Flat Steel Wire.

Size, inches.	1 ¼	1 ½	1 ¾	2	2 ¼	2 ½	2 ¾	3	3 ¼	3 ½
Each . . . . .	\$1 10	1 20	1 20	1 25	1 40	1 50	1 60	1 75	2 00	2 25

## TUBE SCRAPERS.



## Elliptic Spring.

Size, inches.	1 ¼	1 ½	1 ¾	2	2 ¼	2 ½	2 ¾	3	3 ¼	3 ½	4
Each . . . . .	\$2 00	2 00	2 00	2 00	2 25	2 50	2 75	3 00	3 25	3 50	4 00



## Steel Coil Wire.

Size, inches.	1 ¼	1 ½	1 ¾	2	2 ¼	2 ½	2 ¾	3	3 ¼	3 ½	4
Each . . . . .	\$1 00	1 00	1 00	1 10	1 20	1 30	1 40	1 50	1 65	1 75	2 00







# SNATCH BLOCKS.



Clasp Closed.



Iron Strapped.



Clasp Closed.



Clasp Open.

Hollow Malleable Iron.

## Inside and Outside Iron Strapped.

WITH COMMON IRON SHEAVES

Length of Block, Inches.	Thickness of Sheave, Inches.	Each.
8.....	1 1/2.....	\$5 75
10.....	2.....	8 00
12.....	2 1/4.....	9 50
14.....	2 1/2.....	11 50
16.....	3.....	13 75

WITH PATENT IRON SHEAVES.

Length of Block, Inches.	Thickness of Sheave, Inches.	Each
8.....	1 1/2.....	\$7 25
10.....	2.....	10 00
12.....	2 1/4.....	12 00
14.....	2 1/2.....	14 50
16.....	3.....	17 25

## Hollow Malleable Iron.

WITH COMMON IRON SHEAVES.

Size, inches.....	8x1 1/2	10x2
Each.....	\$6 35	9 00

# HOOKS AND THIMBLES.



Hook and Thimble.



Open Thimble.

## Hooks and Thimbles.

Wrought Iron.

Diameter, inches.....	1/4	3/8	1/2	Diameter, inches..	5/8	3/4	7/8	1
Per dozen.....\$				Per pound.....\$				

## Open Thimbles.

Wrought Iron.

Size, inches.....	3/8	1	1 1/4	Size, inches.	1 3/8	1 1/2	1 3/4	2	2 1/4	2 1/2
Per dozen.....\$				Per pound...\$						

# BLOCKS.



Rope Strapped.



Iron Strapped.



## Rope Strapped.

### WITH COMMON IRON SHEAVES.

Length of Block, Inches.	Thickness of Sheave, Inches.	Single, Each.	Double, Each.
4.....	$\frac{3}{4}$ .....	\$0 75.....	\$1 25.....
5.....	$\frac{7}{8}$ .....	90.....	1 65.....
6.....	1.....	1 05.....	1 90.....
6.....	$1\frac{1}{8}$ .....	1 15.....	2 10.....
6.....	$1\frac{1}{4}$ .....	1 15.....	2 10.....
7.....	$1\frac{1}{8}$ .....	1 25.....	2 25.....
7.....	$1\frac{1}{4}$ .....	1 38.....	2 48.....
8.....	$1\frac{1}{4}$ .....	1 60.....	2 75.....
8.....	$1\frac{3}{8}$ .....	1 76.....	3 03.....
8.....	$1\frac{1}{2}$ .....	1 76.....	3 03.....
9.....	$1\frac{1}{4}$ .....	2 00.....	3 25.....
9.....	$1\frac{3}{8}$ .....	2 00.....	3 25.....
10.....	$1\frac{1}{4}$ .....	2 20.....	3 58.....
10.....	$1\frac{3}{8}$ .....	2 40.....	3 75.....
10.....	$1\frac{1}{2}$ .....	2 64.....	4 13.....
10.....	$1\frac{3}{4}$ .....	2 64.....	4 13.....
10.....	2.....	2 88.....	4 50.....
12.....	$1\frac{1}{2}$ .....	3 50.....	6 00.....
12.....	$1\frac{3}{4}$ .....	3 85.....	6 60.....
12.....	2.....	4 20.....	7 20.....
14.....	$1\frac{3}{4}$ .....	4 95.....	8 53.....
14.....	2.....	5 40.....	9 30.....

### WITH PATENT IRON SHEAVES

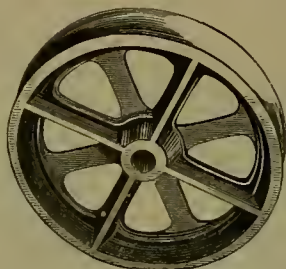
Length of Block, Inches.	Thickness of Sheave, Inches.	Single, Each.	Double, Each.
4.....	$\frac{3}{4}$ .....	\$1 15.....	\$2 10.....
5.....	$\frac{7}{8}$ .....	1 30.....	2 35.....
6.....	1.....	1 65.....	3 00.....
6.....	$1\frac{1}{8}$ .....	1 82.....	3 30.....
6.....	$1\frac{1}{4}$ .....	1 82.....	3 30.....
7.....	$1\frac{1}{8}$ .....	1 90.....	3 50.....
7.....	$1\frac{1}{4}$ .....	2 10.....	3 85.....
8.....	$1\frac{1}{4}$ .....	2 50.....	4 00.....
8.....	$1\frac{3}{8}$ .....	2 75.....	4 40.....
8.....	$1\frac{1}{2}$ .....	2 75.....	4 40.....
9.....	$1\frac{1}{4}$ .....	2 75.....	4 75.....
9.....	$1\frac{3}{8}$ .....	2 75.....	4 75.....
10.....	$1\frac{1}{4}$ .....	3 03.....	5 23.....
10.....	$1\frac{3}{8}$ .....	3 25.....	6 00.....
10.....	$1\frac{1}{2}$ .....	3 58.....	6 60.....
10.....	$1\frac{3}{4}$ .....	3 58.....	6 60.....
10.....	2.....	3 90.....	7 20.....
12.....	$1\frac{1}{2}$ .....	4 75.....	8 25.....
12.....	$1\frac{3}{4}$ .....	5 23.....	9 10.....
12.....	2.....	5 70.....	9 90.....
14.....	$1\frac{3}{4}$ .....	6 60.....	11 55.....
14.....	2.....	7 20.....	12 60.....

## Inside Iron Strapped.

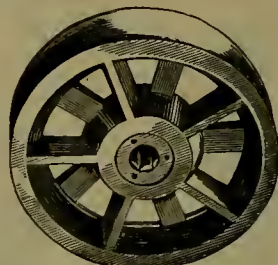
10.....	$1\frac{1}{2}$ .....	\$2 75.....	\$4 75.....
12.....	$1\frac{1}{2}$ .....	3 50.....	6 50.....
12.....	$1\frac{3}{4}$ .....	3 85.....	7 15.....
12.....	2.....	4 20.....	7 80.....
14.....	$1\frac{3}{4}$ .....	4 95.....	8 80.....
14.....	2.....	5 40.....	9 60.....

10.....	$1\frac{1}{2}$ .....	\$3 90.....	\$6 65.....
12.....	$1\frac{1}{2}$ .....	5 00.....	8 50.....
12.....	$1\frac{3}{4}$ .....	5 50.....	9 35.....
12.....	2.....	6 00.....	10 20.....
14.....	$1\frac{3}{4}$ .....	6 76.....	11 88.....
14.....	2.....	7 38.....	12 95.....

## SHEAVES.



Common.



Patent.

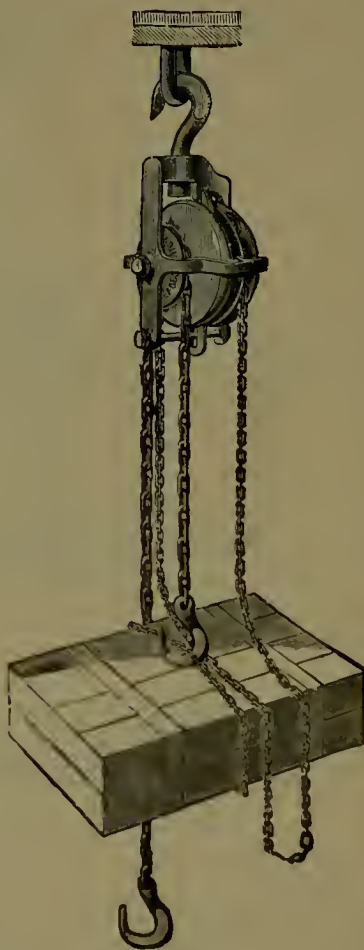
## Iron.

Size of Sheave, Inches.	Size of Pin Hole, Inches. Common.	Patent.	Common, Each.	Patent, Each.	Size of Sheave, Inches.	Size of Pin Hole, Inches. Common.	Patent.	Common, Each.	Patent, Each.
1 1/2 x 3/8	1/4	1/4	....	....	6 x 1 3/4	....	3/4	....	....
1 1/2 x 1/2	1/4	1/4	....	....	6 x 2	5/8	5/8	....	....
1 3/4 x 1/2	1/4	1/4	....	....	6 x 2	....	3/4	....	....
2 x 1/2	3/8	3/8	....	....	7 x 1 1/8	3/4	3/4	....	....
2 1/4 x 5/8	3/8	3/8	....	....	7 x 1 1/4	3/4	3/4	....	....
3 x 5/8	3/8	3/8	....	....	7 x 1 3/8	3/4	3/4	....	....
3 x 3/4	3/8	3/8	....	....	7 x 1 1/2	3/4	3/4	....	....
3 x 7/8	3/8	3/8	....	....	7 x 1 3/4	3/4	3/4	....	....
3 1/2 x 1	3/8	3/8	....	....	7 x 2	3/4	3/4	....	....
3 1/2 x 1 1/8	3/8	3/8	....	....	8 x 1 1/8	3/4	3/4	....	....
3 1/2 x 1 1/4	1/2	1/2	....	....	8 x 1 1/8	....	7/8	....	....
4 x 7/8	1/2	1/2	....	....	8 x 1 1/4	3/4	3/4	....	....
4 x 1	1/2	1/2	....	....	8 x 1 1/4	....	7/8	....	....
4 x 1 1/8	1/2	1/2	....	....	8 x 1 3/8	3/4	3/4	....	....
4 x 1 1/4	1/2	1/2	....	....	8 x 1 3/8	....	7/8	....	....
4 3/8 x 1 1/8	1/2	1/2	....	....	8 x 1 1/2	3/4	3/4	....	....
4 3/8 x 1 1/4	1/2	1/2	....	....	8 x 1 1/2	....	7/8	....	....
5 x 3/4	1/2	1/2	....	....	8 x 1 3/4	3/4	3/4	....	....
5 x 7/8	1/2	1/2	....	....	8 x 1 3/4	....	7/8	....	....
5 x 1	1/2	1/2	....	....	8 x 2	3/4	3/4	....	....
5 x 1 1/8	1/2	1/2	....	....	8 x 2	....	7/8	....	....
5 x 1 1/8	....	5/8	....	....	9 x 1 1/4	1	1	....	....
5 x 1 1/4	1/2	1/2	....	....	9 x 1 1/2	1	1	....	....
5 x 1 1/4	....	5/8	....	....	9 x 1 3/4	1	1	....	....
5 x 1 3/8	5/8	5/8	....	....	9 x 2	1	1	....	....
5 x 1 1/2	3/4	3/4	....	....	9 x 2	....	1 1/4	....	....
6 x 3/4	5/8	5/8	....	....	10 x 1 1/4	1	1	....	....
6 x 7/8	5/8	5/8	....	....	10 x 1 1/2	1	1	....	....
6 x 1	5/8	5/8	....	....	10 x 1 3/4	1	1	....	....
6 x 1	....	3/4	....	....	10 x 2	1	1	....	....
6 x 1 1/8	5/8	5/8	....	....	10 x 2	....	1 1/4	....	....
6 x 1 1/8	....	3/4	....	....	11 x 1 1/2	1	1	....	....
6 x 1 1/4	5/8	5/8	....	....	11 x 1 3/4	1	1	....	....
6 x 1 1/4	....	3/4	....	....	11 x 2	1	1	....	....
6 x 1 3/8	5/8	5/8	....	....	11 x 2	....	1 1/4	....	....
6 x 1 3/8	....	3/4	....	....	12 x 1 3/4	1	1	....	....
6 x 1 1/2	5/8	5/8	....	....	12 x 2	1	1	....	....
6 x 1 1/2	....	3/4	....	....	12 x 2	....	1 1/4	....	....
6 x 1 3/4	5/8	5/8	....	....	.....	.....	.....	.....	.....

# DIFFERENTIAL PULLEY BLOCKS.



Weston's.



Eades'

## Weston's.

Capacity.....	$\frac{1}{4}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	3
Will Hoist, feet.....	6	7	8	$8\frac{1}{2}$	9	$9\frac{1}{2}$
Price complete, each.....	\$					
Extra Chain, per foot.....						

Allow about four feet of Chain for each foot of Hoist.

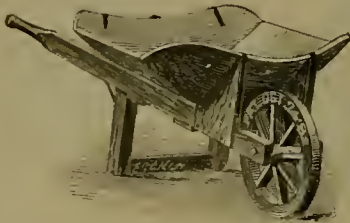
## Eades'.

Capacity.....	$\frac{1}{2}$	1	$1\frac{1}{2}$	2
Will Hoist, feet.....	7	8	9	10
Price complete, each.....	\$			
Extra Lift, per foot.....				

The "Extra Lift, per foot," includes one foot of Lift Chain and two feet of Endless Hand Chain.

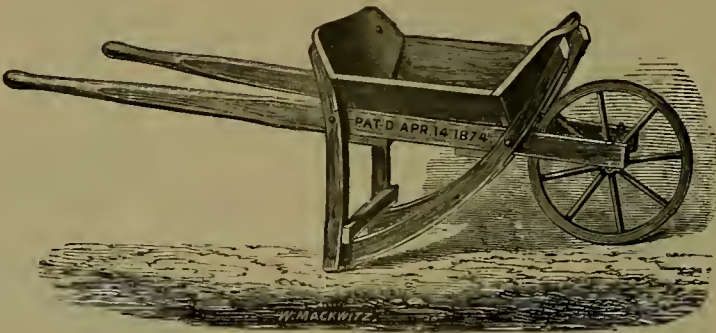


BARROWS.



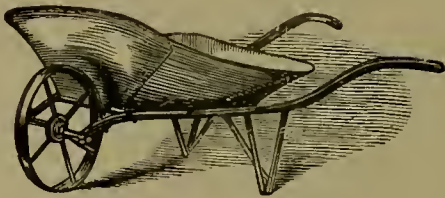
Common Canal.

Wood Wheel, 1 1/2 inch Tire.....	Per dozen, \$
Iron, Wheel all cast, 1 1/2 inch Tire.....	"
Iron Wheel, wrought Spokes, cast Hub, 1 1/2 inch Tire.....	"



Champion.

Bent Leg, Iron Wheel, 1 1/2 inch Tire..	Per dozen, \$
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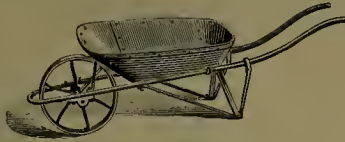
Tubular.

Gas Pipe Frames, Wrought Iron Trays, Wheels, Legs and Braces.

Nos.....	1	1 Banded	1 1/2	2
Size of Trays, inches.....	31x26	31x26	32 1/2x27	37x31 1/2
Each.....	\$13 00	15 50	17 50	20 00



# BARROWS.



All Steel.

Nos.....	1	2
Each.....	\$	

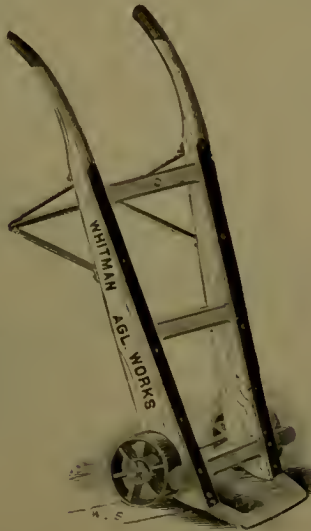


Garden.

Iron Wheel, Wrought Spoke, Cast Hub.

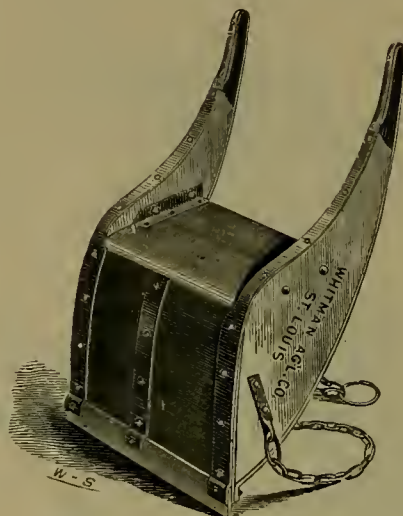
Nos.....	1	2	3	4
Each.....	\$			

# STORE TRUCKS.



No.....	1	2	3	4
Inside Wheels.....	Each. \$6 50	8 50	12 50	17 00
Outside ".....	" 6 00	8 00	12 00	16 00

# ROAD SCRAPERS.



California Pattern ..... Each, \$

# WAGON JACKS.



Excelsior.



Clark's.

## Excelsior.

Each ..... \$

## Clark's.

Ironed.

Nos. ....	1	2	3
Each. ....	\$		

## TAMPING BARS.



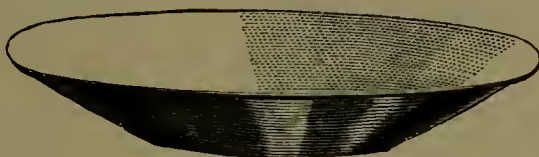
From  $\frac{3}{4}$  to  $1\frac{1}{4}$  inches..... Each, \$2 00

## DRILL SPOONS.



Assorted..... Per dozen, \$6 00

## MINERS' GOLD PANS.



Pressed..... Unpolished. Polished. Russia Iron. Russia Iron, Pieced.  
Per dozen.....\$

## MINERS' CANDLESTICKS.

All Steel..... Per dozen, \$



## MINERS' HAT LAMPS.

Tin, Double Tube..... Per dozen, \$

## MORTARS AND PESTLES.



Heavy Vase Shape, Turned Inside.

Capacity, quarts..... $\frac{1}{2}$	1	2	4	6	8	12	16
Each.....\$0 80	1 20	2 00	3 00	4 50	5 50	9 00	11 00

## QUICKSILVER RETORTS.

Ground Inside, With Pipe.



Capacity, pints.....	1	2	3	4
Capacity, ounces.....	16	32	48	64
Size of Pipe, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Each.....\$				

CRUCIBLES.

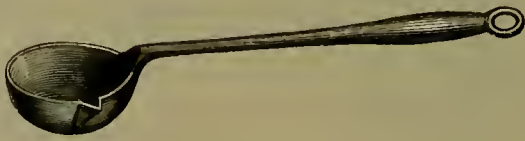


Black Lead.

No.	Height.	Width.	Capacity in Liquid Measure.	Capacity in Metallie Measure.
1.....	3½ inches.....	2⅞ inches.....	⅓ pint.....	3 lbs.
2.....	3¾ ".....	3¼ ".....	½ ".....	6 "
3.....	4⅝ ".....	3⅞ ".....	1 ".....	9 "
4.....	5 ".....	4½ ".....	1¼ ".....	12 "
5.....	5⅝ ".....	4⅝ ".....	1¾ ".....	15 "
6.....	6¼ ".....	5⅝ ".....	2¼ ".....	18 "
8.....	7 ".....	5⅝ ".....	3 ".....	24 "
10.....	7¾ ".....	6⅝ ".....	4½ ".....	30 "
12.....	8½ ".....	6⅝ ".....	5¾ ".....	36 "
14.....	9 ".....	7⅞ ".....	6½ ".....	42 "
16.....	9½ ".....	7¾ ".....	8 ".....	48 "
18.....	9¾ ".....	8 ".....	9¼ ".....	54 "
20.....	10 ".....	8¼ ".....	10 ".....	60 "
25.....	10¾ ".....	8⅝ ".....	12½ ".....	75 "
30.....	11½ ".....	9 ".....	14 ".....	90 "
35.....	11¾ ".....	9⅞ ".....	16½ ".....	105 "
40.....	12⅜ ".....	9½ ".....	18 ".....	120 "
45.....	12⅞ ".....	9¾ ".....	20½ ".....	135 "
50.....	13⅜ ".....	10⅜ ".....	24 ".....	150 "
60.....	14 ".....	10¾ ".....	26½ ".....	180 "
70.....	14⅜ ".....	11 ".....	29 ".....	210 "
80.....	14⅞ ".....	11¼ ".....	31 ".....	240 "
100.....	15⅜ ".....	11⅞ ".....	35½ ".....	300 "
125.....	16 ".....	12⅞ ".....	38 ".....	375 "
150.....	16⅞ ".....	13 ".....	50 ".....	450 "

Nos.....	1	2	3	4	Nos.....	5 to 16	18 and larger.
Each.....\$					Per number.....\$		
Crucible Covers, Black Lead.....						Per number, \$	

MELTING LADLES.

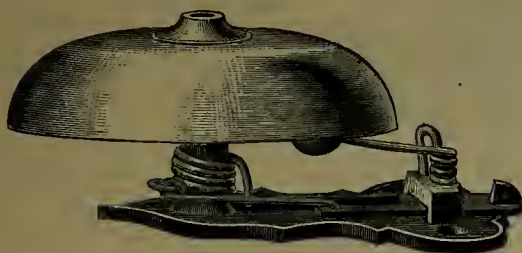


Diameter of Bowl, inches.....	3	4	5	6
Per dozen.....\$				

MAGNETS.

Length, inches.....	2½	3	4	5	6	7	8	10
Per dozen.....\$								

# GONG BELLS.



No. 30.



No. 2.

## No. 30. Abbe's Patent.

Polished Bell Metal.

Diameter, inches..	3	4	5	6	8
Per dozen.....	\$8 00	10 00	14 00	20 00	40 00

## No. 2. California Pattern.

Diameter, inches .....	4	5	6	8	10	12
Each .....	\$3 15	3 65	4 30	6 75	9 00	15 00



No. 125. Half Size.



## Door Bells.

## Alarm Whistles.

No. 125. Bronzed Steel Bell.....	Per dozen, \$5 00	Plain Whistles, Plated....	Per dozen, \$
		Indicator Whistles, Plated. "	"

# SLIDE BELL PULLS.



No. 48. Half Size.

## Cast Brass.

No. 48. Polished and Lacquered.....	Per dozen, \$
No. 50. " " Large.....	"



JACK SCREWS.



Length of Screw, inches.....	6	8	10	12	14	16	18	20
Diameter Screw... 1 1/8 inch...	\$2 25	\$2 25	\$2 50	\$2 75	\$3 00	.....	.....	.....
Diameter " ... 1 1/4 " ..	3 25	3 50	3 75	4 00	4 25	.....	.....	.....
Diameter " ... 1 3/8 " ..	4 00	4 00	4 25	4 50	5 00	\$5 25	.....	.....
Diameter " ... 1 1/2 " ..	4 25	4 25	4 50	4 75	5 25	5 50	\$6 00	.....
Diameter " ... 1 3/4 " ..	5 25	5 25	5 50	5 75	6 50	7 00	8 75	\$10 00
Diameter " ... 2 " ..	6 50	6 50	7 00	7 50	8 50	9 50	10 00	10 50
Diameter " ... 2 1/4 " ..	.....	.....	12 00	12 00	13 00	14 00	15 00	16 00
Diameter " ... 2 1/2 " ..	.....	.....	12 00	13 00	14 00	16 00	18 00	20 00
Diameter " ... 3 " ..	.....	.....	.....	.....	.....	24 00	26 00	28 00

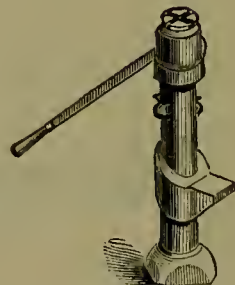
Bell Bottom complete, with Lever and Wrought Screw.

HYDRAULIC JACKS.



WIDE BASE.

To lift 7 tons, 12 inches.....	Each, \$80 00
To lift 10 " 12 " .....	95 00
To lift 15 " 12 " .....	125 00



WITH CLAW ON SIDE.

To lift 7 tons, 12 inches.....	Each, \$85 00
To lift 10 " 12 " .....	" 100 00
To lift 15 " 12 " .....	" 150 00

## MOULDERS' TOOLS.



### Square Trowels.

Size, inches.....	1x4, 1 1/4x5	1 1/2x5 1/2, 1 3/4x6
Per dozen.....	..\$	



Heart Trowels.



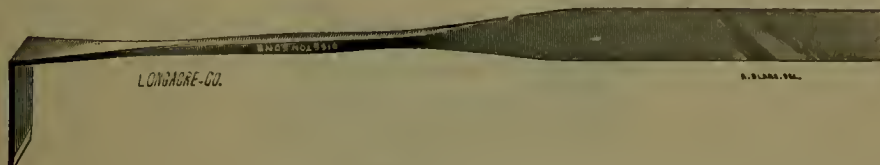
Heart and Square.

### Heart Trowels.

Size, inches.....	2x3, 2 1/2x3 1/2
Per dozen.....	..\$

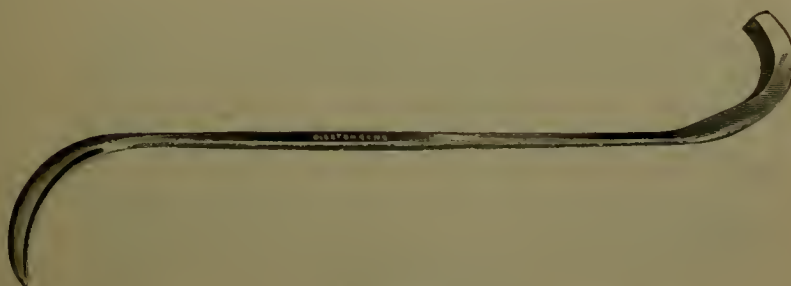
### Heart and Square.

Size, inches.....	1 1/4, 1 1/2	1 3/4
Per dozen.....	..\$	



### Lifters.

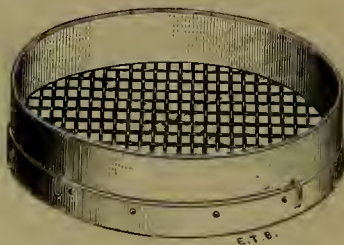
Size, inches.....	18x10, 1/4x12, 38x13, 1/2x14	58x15, 3/4x16, 78x17, 1x18
Per dozen.....	..\$	



### Flange and Bead Slickers.

Size, inches.....	1/2x14, 3/4x16
Per dozen.....	..\$

## MOULDERS' TOOLS.



Riddles.

Nos. 2, 3, 4, 6, 8, 10, 12, 16 and 18.

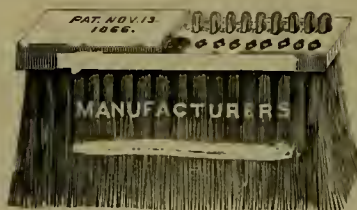
Iron Wire, 18 inches diameter.....	Per dozen, \$
Iron Wire, 20 ".....	"
Brass Wire, 18 ".....	"



Bellows.

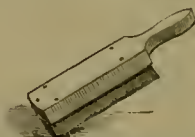
Length, inches.....	14	16
Per dozen.....	\$	

## STEEL WIRE CASTING BRUSHES.



No. 4.

No. of Rows of Wire.....	4	4	5	6
Length of Wire, inches.....	2	2½	2½	3
Per dozen.....	\$5 50	6 00	7 00	9 00



No. 5.

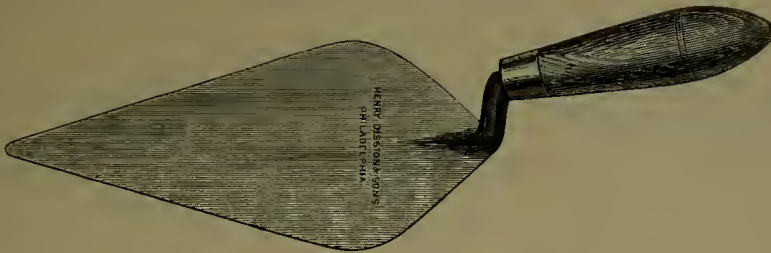
No. of Rows of Wire.....	2	3	4	5
Length of Wire, inches.....	2½	2½	2½	2½
Per dozen.....	\$4 00	5 00	6 00	7 00



No. 6.

Length of Wire, inches.....	4½	6
Per dozen.....	\$7 00	9 00

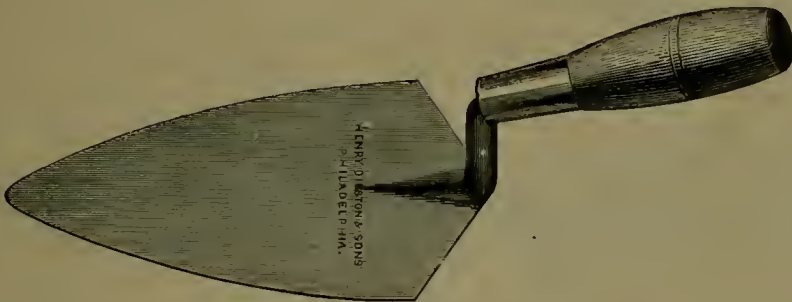
# TROWELS.



## Brick.

LONDON PATTERN.

Length, inches...	9	9½	10	10½	11	11½	12	12½	13
Disston's, per doz. \$									
Brade's, " "									



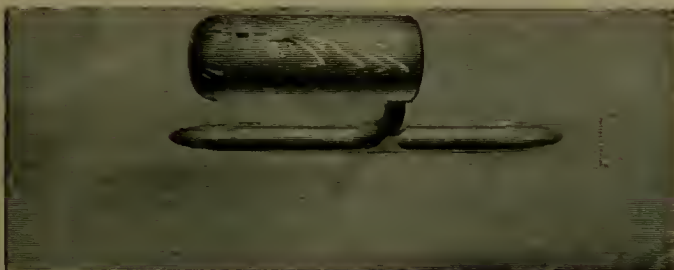
## SQUARE HEEL.

Length, inches.....	11	12	13
Rose's, per dozen.....	\$		



## Pointing.

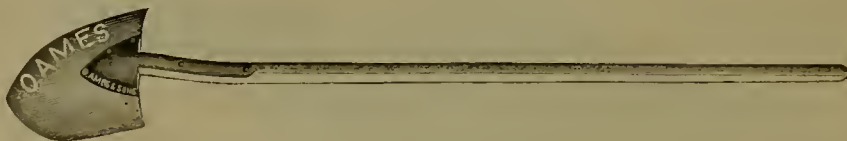
Length, inches.....	5	5½	6
Per dozen.....	\$		



## Plastering.

Length, inches.....	10	10½	11	11½	12
Disston's, No. 1. Per dozen.....	\$				
Disston's, No. 2. " ".....					

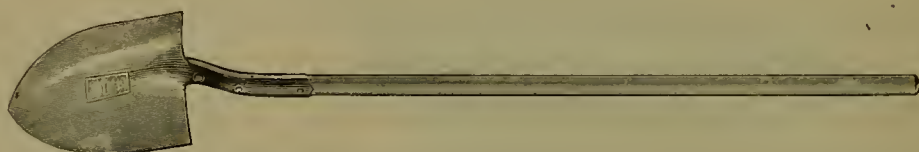
## SHOVELS.



## Long Handle, Back Strap, Round Point.

No. 2, Polished.

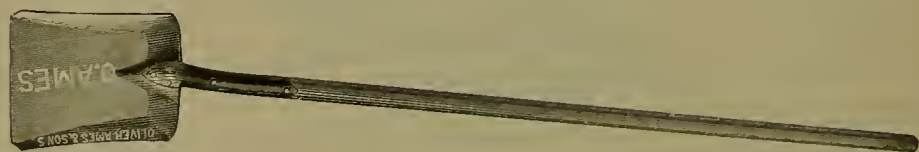
I. Miller, Iron.....	Per dozen, \$
Chas H. Reed, Steel.....	"
O. Ames, ".....	"
G. Gray, " Spring Point.....	"
Chas. H. Reed, Steel Spading.....	"
O. Ames, " ".....	"



## Long Handle, Plain Back, Round Point.

No. 2, Polished.

Carter, Steel.....	Per dozen, \$
--------------------	---------------



## Long Handle, Back Strap, Square Point.

No. 2, Polished.

Chas. H. Reed, Steel.....	Per dozen, \$
O. Ames, ".....	"



## Long Handle, Plain Back, Square Point.

No. 2, Polished.

Carter, Steel.....	Per dozen, \$
--------------------	---------------



# SHOVELS.



D Handle, Back Strap, Round Point.

Chas. H. Reed, Steel, Polished, No. 2..... Per dozen, \$  
O. Ames, " " " " " " " " " " " "



D Handle, Back Strap, Square Point.

Chas. H. Reed, Steel, Polished, No. 2..... Per dozen, \$  
O. Ames, " " " " " " " " " " " "



D Handle, Plain Back, Square Point.

Carter, Steel, Polished, No. 2..... Per dozen, \$



Moulders', D Handle, Square Point.

Carter, Plain Back, Steel, Polished, No. 2..... Per dozen, \$

# SPADES.



D Handle, Back Strap.

Long Handle.

Chas. H. Reed, Back Strap, Steel, Polished, No. 2..... Per dozen, \$  
O Ames, " " " " " " " " " " " "  
Carter, Plain " " " " " " " " " " " "  
O. Ames, " " " " " " " " " " " "

D Handle.

Chas. H. Reed, Back Strap, Steel, Polished, No. 2..... Per dozen, \$  
O. Ames, " " " " " " " " " " " "

## SCOOPS.



D Handle, Back Strap.

## D Handle, Back Strap.

SANDERSON'S, IRON, HALF POLISHED.

Nos. ....	3	4	5	6	7	8
Per dozen.....\$						

NAYLOR'S, STEEL, HALF POLISHED.

Nos. ....	3	4	5	6	7	8	9	10
Per dozen..\$								

O. AMES', STEEL, BLACK.

Nos. ....	2	3	4	5	6
Per dozen.....\$					

## D Handle, Plain Back.

HUNTINGTON, STEEL, BLACK.

Nos. ....	2	3	4	5
Per dozen.....\$				

## Long Handle, Back Strap.

NAYLOR'S, STEEL, HALF POLISHED.

Nos. ....	3	4
Per dozen. ....	\$	

## HANDLES.

Shovel, 4½ feet long, Bent.....	Per dozen, \$
Spade, 4½ " Straight.....	"
Scoop, D.....	"

# PICKS.



## Surface.

Nos .....	1	2	3	4	5	6	7
Weight each, lbs.....	4	4½	5	5½	6	6½	7
Per dozen .....	\$14 00	15 00	16 00	17 50	18 00	19 00	20 00

Two dozen in a case.

## Drift.

Nos .....	15	16	17	18	19	20
Weight each, lbs.....	3½	4	4½	5	5½	6
Per dozen.....	\$14 00	14 00	15 00	16 00	17 00	18 00

Two dozen in a case.



## Poll.

Nos .....	21	22	23	24	25
Weight each, lbs.....	4	4½	5	5½	6
Per dozen.....	\$16 00	17 00	18 00	19 00	20 00

Two dozen in a case.

# PICK EYES.



## Surface.

Per dozen ..... \$

Two dozen in a case.



## Drift.

Per dozen ..... \$

Two dozen in a case.

LANTERNS.



No. 3. Star.



No. 1. Star.

Railroad.

- No. 1. Star, Tin, with 12 lb. Flint Star Glass, Bayonet Catch.....Per dozen, \$  
No. 3. “ “ 9 lb. Lime “ Side Spring Catch..... “



Queen.



Gem.

Conductors'.

- Queen, Wire Bottom, Nickle Plated, Loose Globe.....Each, \$  
Gem, Solid “ “ “ ..... “  
With White, Half Green or Half Ruby Globes. Names engraved to order.

# LANTERNS.



No. 0.



No. 0. With Lift Wire Attachment

## Tubular.

No. 0. .... Per dozen, \$  
 No. 0. With Lift Wire Attachment. .... "



No. 3.



No. 4.

## Buckeye.

No. 3. With Double Globes. .... Per dozen, \$  
 No. 4. " " .... "

## Leader.

With Double Globe and Bull's Eye. .... Per dozen, \$



## LANTERNS.



### Police.

Size .....	Small.	Medium.	Large.
Height, inches.....	6½	7½	8½
Diameter.....	3	3¼	3¾
Per dozen.....	\$		

### Square, Farm.

Will Burn Oil or Candle.

Numbers.....	I	4
Per dozen.....	\$	

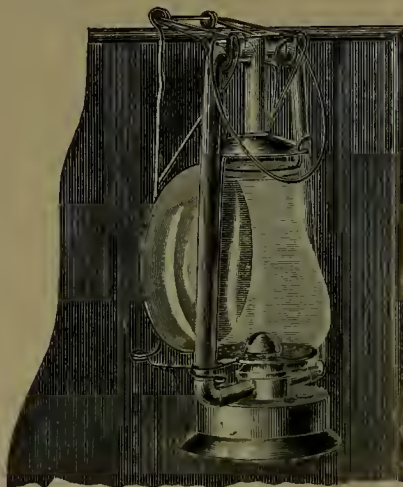
## LANTERN GLOBES.

Tubular, No. o.....	Per dozen, \$
No. 1. Star.....	"
No. 3. Star.....	"
No. 1. Buckeye, inside, for Lantern No. 3.....	"
No. 2. " outside, " " 3.....	"
No. 3. " inside, " " 4.....	"
No. 4. " outside, " " 4.....	"
Conductors', Gem or Queen, White.....	"
Conductors', " " Half Green.....	"
Conductors', " " Half Ruby.....	"
Leader, inside.....	"
Leader, outside.....	"

## HEADLIGHT CHIMNEYS.

Flint Glass.....	Per dozen, \$
------------------	---------------

# LAMPS.



## Tubular Dash Board.

Complete with Reflector . . . . . Per dozen, \$



Streeter.



Ohio.



London.

## Carriage.

STREETER.

No. 2.	Glass	$2\frac{3}{4} \times 3\frac{1}{2} \times 3\frac{3}{4}$ inches.	Per pair, \$
No. 3.	"	$3\frac{1}{4} \times 3\frac{3}{4} \times 4\frac{1}{4}$ "	"
No. 4.	"	$3\frac{3}{4} \times 4\frac{1}{4} \times 4\frac{3}{4}$ "	"

OHIO.

No. 1.	Glass	$3\frac{1}{8} \times 3\frac{1}{2}$ inches.	Per pair, \$
No. 2.	"	$3\frac{1}{4} \times 3\frac{3}{4}$ "	"
No. 3.	"	$3\frac{1}{2} \times 4$ "	"

LONDON.

No. 1.	Glass	$3\frac{1}{8} \times 3\frac{1}{2}$ inches.	Per pair, \$
No. 2.	"	$3\frac{1}{4} \times 3\frac{3}{4}$ "	"
No. 3.	"	$3\frac{1}{2} \times 4$ "	"

## LAMPS.



No. 8057.



No. 8075.

## Dash Board.

Burns Kerosene Oil.

No. 8057. 11½ inches high; 4½ inch Front Light; 3½ inch Metal Reflector.

Each.....\$

No. 8075. 11½ inches high; 4½ inch Front Light; Conical Reflector; highly finished.

Each.....\$



## Side.

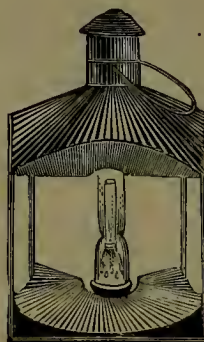
Size of Glass, inches.....	5x9	6x10	8x12	10x14	12x16
Height over all ".....	14	16	20	22	24
Size of Reflector, ".....	4	5	7	9	11
Each.....	\$				

These Lamps have a Patent Chimney Top that can be raised or lowered.

## LAMPS.



Tapering.



Square.

## Central Reflector.

With Corrugated Reflectors.

Tapering, with No. 2 Flat or Argand Burner, 13x18 inches.....					Each, \$
Tapering,	"	3	"	"	15x20 " .....
Square,	"	2	"	"	12x20 " .....
Square,	"	3	"	"	12x20 " .....



## Headlights.

EASTERN.

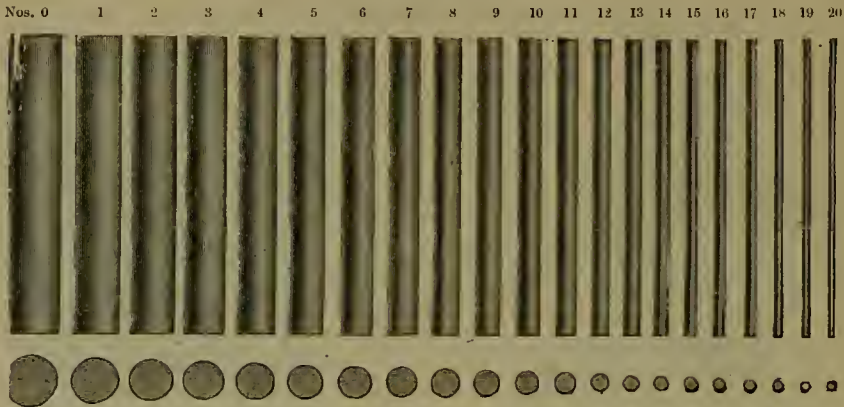
Reflector 23 inches, for Broad Gauge Roads.....					Each, \$
Reflector 16	"	"	Narrow	"	" .....

CALIFORNIA.

Reflector 20½ inches, height 36 inches, depth 16 inches.....					Each, \$
Reflector 17	"	"	30	"	14 " .....
Reflector 14½	"	"	25	"	12 " .....



## WIRE.



## Bright and Annealed Wire.

Nos.....	0 to 9	10 and 11	12	13 and 14	15 and 16	17	18
Per pound.....	\$0 10	11	11½	12½	14	15	16

In bundles of 63 pounds.

## Galvanized Iron.

Nos.....	0 to 9	10 and 11	12	13 and 14	15 and 16	17	18
Per pound.....	\$0 10	11	11½	12½	14	15	16

In bundles of about 100 pounds.

## Annealed Iron.

Nos.....	18	19	20	21	22	23	24
Per pound .....	\$0 16	19	20	21	22	23	24

In bundles of 12 pounds.

## Tinned Broom.

Nos. 18 to 20.....	Per pound, \$0 20
--------------------	-------------------

In bundles of 12 pounds.

## Crucible Steel.

Nos.....	0 to 6	7 to 9	10 and 11	12	13 and 14	15 and 16	17	18	19	20
Per pound....	\$0 20	21	22	23	24	25	26	28	30	35

## Copper.

Nos.....	00 to 20	21	22	23	24
Per pound.....	\$0 43	46	47	48	50

## Soft Brass.

Nos.....	00 to 20	21	22	23	24
Per pound.....	\$0 33	36	37	38	40

## Spring Brass.

Nos.....	00 to 20	21	22	23	24
Per pound.....	\$0 35	38	39	40	42

Copper and Brass Wire in 5 and 10 pounds.

## Spooled Hair.

Iron, ¼ pound Spools, Nos. 24 to 40.....	Per dozen, \$
Copper, ¼ pound Spools, Nos. 24 to 40.....	"
Plated, ¼ " " " 24 " 40.....	"



## ROPE.

### Sisal.

$\frac{1}{4}$ inch diameter (6 thread).....	Per lb., \$
5-16 " " (9 " ).....	"
$\frac{3}{8}$ " " (12 " ).....	"
7-16 " " (1 $\frac{1}{4}$ inches circumference) and larger.....	"
Bale, 2, 3 and 4 Strand.....	"

### Manila.

$\frac{1}{4}$ inch diameter (6 thread).....	Per lb., \$
5-16 " " (9 " ).....	"
$\frac{3}{8}$ " " (12 " ).....	"
7-16 " " (1 $\frac{1}{4}$ inches circumference) and larger.....	"
Bale, 2, 3 and 4 Strand.....	"

### Tarred Hemp.

$\frac{5}{8}$ inch diameter (2 inches circumference) and larger.....	Per lb., \$
Smaller sizes.....	"

### Cotton.

Diameter, 3-16, $\frac{1}{4}$ , 5-16, $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{5}{8}$ , $\frac{3}{4}$ .....	Per lb., \$
---	-------------

### Tarred Cordage.

Marline (2 strand).....	Per lb., \$
Housline (3 " ).....	"
Hambroline (3 " ).....	"
Spunyarn (3 and 4 yarn).....	"
Lathyarn.....	"

When ordering Rope, please state whether circumference or diameter is wanted.

## FELT.

### Roofing.

Rolls, 30 inches wide by 75 feet long.....	Per roll, \$
--	--------------

### Boiler.

Thickness, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$
Per Square Foot.....	\$			

In Rolls, 6 feet wide by 50 feet long.

## CANDLE WICKING.

Cotton.....	Per lb., \$
-------------	-------------

## ROPE.



## Wire.

PER POUND.

Circumference, Inches.	Diameter, Inches.	Galvanized Iron Wire Rope.		Refined Charcoal Iron Wire Rope.		Refined Crucible Steel Wire Rope.	
		Coarse.	Flexible Charcoal.	Coarse.	Flexible.	Coarse.	Flexible.
1	5-16	\$0 15	\$0 34	\$0 22	\$0 32	\$0 28	\$0 50
1 1/4	3/8	14	30	20	30	27	40
1 1/2	7-16	13	26	19	26	26	36
1 3/4	1/2	12	22	18	22	24	32
2	5/8	11 1/2	20	17	19	23	28
2 1/4	11-16	11	20	16	18	22	26
2 3/8	3/4	11	19	16	18	22	26
2 1/2	13-16	10 1/2	18	15	17	21	25
2 3/4	7/8	10 1/4	18	14	16	20	24
3	15-16	10	17	13	15	19	23
3 1/4	1, 1-16	10	17	13	16	19	23
3 1/2	1 1/8	10	16	12	14	18	22
3 3/4	1 3-16	9 1/2	16	12	14	18	22
4	1 1/4	9 1/2	15	12	14	18	22
4 1/2	1 7-16	9 1/2	15	11	13	18	20
5	1 5/8	9 1/2	14	11	13	18	20
5 1/2	1 3/4	9 1/2	14	10	12	18	20
6	1 7/8	9 1/2	14	10	12	18	20

Coarse Ropes are made 6 Strands of 7 Wires. Flexible Ropes, 6 Strands of 19 Wires.

BESSEMER &amp; SIEMEN'S-MARTIN STEEL WIRE ROPE, same price as Refined Charcoal Iron.

## WIRE CORDS.

For Window Sashes, Dumb Waiters, Signal Cords, Hanging Pictures and Chandeliers, Transmission of Power, Etc.

All made with 6 Strands of 7 Wires. Sizes from 1/4 inch to 7/8 inch circumference.

	Plain Iron.		Galvanized Iron.		Copper.				
Per yard, all sizes.....	\$o 10		o 12		o 17				
Seven-ply Galvanized Iron Wire Strand for Guys, Fencing, Signals, Etc.									
Trade Number.....	oo	o	1	2	3	4	5	6	7
Diameter, inches.....	½	7-16	¾	5-16	¼	¼ sml	1-5	⅙	1-7
Per 100 ft., Galvanized..	\$6 50	5 00	3 25	2 50	1 75	1 25	1 00	90	75

## TELEGRAPH STRETCHERS.

BUCKLEY'S.

Single and Double.....Per pair, \$

## PACKING.

### Rubber.

Sheet, thickness, inch.    1-32                      1-16                      3-32                      1/8                      5-32                      3-16                      1/4  
Per pound.....\$

Three feet wide, any length.

Round and Square, Rubber Core, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8 and 1 inch..... Per lb., \$

Square, Rubber Back, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8 and 1 inch..... “

In lengths of twelve feet.

### Soapstone.

Round, diameter, inches, 3/8, 1/2, 5/8, 3/4, 7/8 and 1..... Per lb., \$

### Asbestos.

Sheet, 1-16 to 1/2 inch thick..... Per lb., \$

Round, diameter, inches, 3/8, 1/2, 5/8, 3/4, 7/8, 1 and 1 1/8..... “

### Pure American Hemp.

In coils of 50 and 100 lbs..... Per lb., \$

### Italian Hemp.

In coils of 25 and 50 lbs..... Per lb., \$

### Italian Flax.

In coils of 25 lbs..... Per lb., \$

## PLUMBAGO.

Dixon's..... Per lb., \$

In cans of 10 pounds each.

## AXLE GREASE.

Hucks & Lamberts', two dozen two pound cans in a case..... Per case, \$

Hucks & Lambert's, five gallon cans..... Per can,

Hucks & Lambert's, in kegs about 100 lbs, each..... Per lb.,

Paragon, three dozen wood boxes in a case..... Per case,

Dixon's, in one pound cans..... Per dozen,

Dixon's, in two “..... “

## WASTE.

Machined Cop (Cotton)..... Per lb., \$

Wool..... “

In bales about 100 pounds each.

# BELT COUPLINGS.



For Round Leather Belts.

Diameter, in.	$\frac{1}{4}$	5-16	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Per dozen...	\$							

# DRAWING AWLS.



Best Cast Steel..... Per dozen, \$

# HAND BELT PUNCHES.



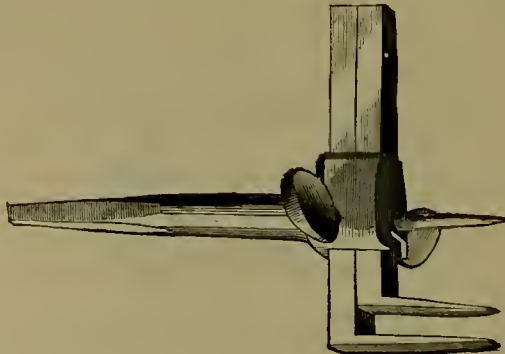
Best Cast Steel..... Per dozen, \$

# LACE CUTTERS.



Elliott's, "1880"..... Per dozen, \$

# WASHER CUTTERS.



Penney's.....	Penney's.	Per dozen, \$
Smith's.....		"

## SCREWS.



## Iron.

Per Gross.

$\frac{1}{4}$ INCH.		$\frac{3}{8}$ INCH.		$\frac{1}{2}$ INCH.		$\frac{5}{8}$ INCH.		$\frac{3}{4}$ INCH.	
No.	o.....\$o 20	No.	1.....\$o 20	No.	2.....\$o 20	No.	2.....\$o 20	No.	4.....\$o 24
1.....	20	2.....	20	3.....	20	3.....	20	5.....	28
2.....	20	3.....	20	4.....	20	4.....	21	6.....	31
		4.....	20	5.....	23	5.....	25	7.....	34
		5.....	20	6.....	25	6.....	28	8.....	37
		6.....	21	7.....	28	7.....	31	9.....	42
		7.....	25	8.....	31	8.....	34	10.....	46
		8.....	28	9.....	34	9.....	37	11.....	52
				10.....	37	10.....	42	12.....	59
						11.....	46	13.....	67
						12.....	52	14.....	74
								15.....	83
								16.....	98
$\frac{3}{8}$ INCH.		1 INCH.		$1\frac{1}{4}$ INCH.		$1\frac{1}{2}$ INCH.		$1\frac{3}{4}$ INCH.	
No.	5.....\$o 31	No.	5.....\$o 34	No.	7.....\$o 49	No.	8.....\$o 65	No.	9.....\$o 80
6.....	34	6.....	37	8.....	56	9.....	72	10.....	84
7.....	37	7.....	41	9.....	62	10.....	79	11.....	93
8.....	42	8.....	46	10.....	67	11.....	87	12.....	1 04
9.....	46	9.....	52	11.....	74	12.....	95	13.....	1 18
10.....	49	10.....	56	12.....	83	13.....	1 09	14.....	1 33
11.....	58	11.....	62	13.....	95	14.....	1 23	15.....	1 50
12.....	65	12.....	72	14.....	1 05	15.....	1 37	16.....	1 65
13.....	73	13.....	77	15.....	1 19	16.....	1 57	17.....	1 79
14.....	83	14.....	91	16.....	1 33	17.....	1 70	18.....	1 98
15.....	93	15.....	1 02	17.....	1 49	18.....	1 92	20.....	2 27
16.....	1 01	16.....	1 14	18.....	1 64	20.....	2 17	22.....	2 66
		17.....	1 21	20.....	1 96			24.....	3 29
		18.....	1 35						
		20.....	1 67						
2 INCH.		INCH.		$2\frac{1}{2}$ INCH.		$2\frac{3}{4}$ INCH.		3 INCH.	
No.	10.....\$o 91	No.	11.....\$1 05	No.	12.....\$1 33	No.	13.....\$1 57	No.	14.....\$1 95
11.....	98	12.....	1 21	13.....	1 44	14.....	1 79	15.....	2 10
12.....	1 12	13.....	1 33	14.....	1 64	15.....	2 00	16.....	2 37
13.....	1 25	14.....	1 51	15.....	1 85	16.....	2 16	17.....	2 65
14.....	1 40	15.....	1 68	16.....	2 00	17.....	2 41	18.....	2 96
15.....	1 58	16.....	1 82	17.....	2 16	18.....	2 65	20.....	3 54
16.....	1 75	17.....	1 99	18.....	2 37	20.....	3 18	22.....	4 20
17.....	1 88	18.....	2 24	20.....	2 77	22.....	3 74	24.....	4 78
18.....	2 10	20.....	2 56	22.....	3 29	24.....	4 44	26.....	5 60
20.....	2 41	22.....	2 97	24.....	4 06				
22.....	2 82	24.....	3 80						
24.....	3 50								



## SCREWS.

## Iron.

3½ INCH.	4 INCH	4½ INCH.	5 INCH.	6 INCH.
No. 16.....\$2 87	No. 18.....\$3 98	No. 18.....\$4 48	No. 20.....\$6 30	No. 24.....\$9 45
17..... 3 14	20..... 4 85	20..... 5 41	22..... 7 11	26.....10 85
18..... 3 57	22..... 5 46	22..... 6 02	24..... 8 04	28.....13 06
20..... 4 15	24..... 6 16	24..... 7 14	26..... 8 93	30.....15 05
22..... 4 97	26..... 6 93	26..... 8 05		
24..... 5 55				
26..... 6 39				

Round and Flat Head Blued, and Flat Head Japanned Screws, same list as Iron Screws.

## Brass.

Per Gross.

3/8 INCH.	½ INCH.	5/8 INCH.	¾ INCH.	7/8 INCH.
No. 1.....\$0 67	No. 2..... \$0 67	No. 2.....\$0 67	No. 4.....\$0 81	No. 6.....\$1 18
2..... 67	3..... 67	3..... 67	5..... 88	7..... 1 26
3..... 67	4..... 67	4..... 67	6..... 1 01	8..... 1 37
4..... 67	5..... 72	5..... 81	7..... 1 11	9..... 1 47
5..... 72	6..... 79	6..... 88	8..... 1 18	10..... 1 63
6..... 79	7..... 95	7..... 1 01	9..... 1 33	11..... 1 85
7..... 88	8..... 1 01	8..... 1 08	10..... 1 47	12..... 2 06
	9..... 1 11	9..... 1 18	11..... 1 70	13..... 2 33
	10..... 1 23	10..... 1 33	12..... 1 92	14..... 2 65
		11..... 1 47	13..... 2 14	15..... 3 07
		12..... 1 63	14..... 2 41	16..... 3 46
			15..... 2 87	
			16..... 3 39	

1 INCH.	1¼ INCH.	1½ INCH.	1¾ INCH.
No. 6.....\$1 23	No. 7.....\$1 60	No. 8.....\$2 06	No. 9.....\$2 62
7..... 1 33	8..... 1 77	9..... 2 28	10..... 2 91
8..... 1 47	9..... 1 91	10..... 2 41	11..... 3 21
9..... 1 63	10..... 2 19	11..... 2 80	12..... 3 53
10..... 1 77	11..... 2 41	12..... 3 10	13..... 3 91
11..... 1 99	12..... 2 66	13..... 3 43	14..... 4 31
12..... 2 21	13..... 2 94	14..... 3 80	15..... 4 76
13..... 2 48	14..... 3 29	15..... 4 20	16..... 5 18
14..... 2 87	15..... 3 61	16..... 4 64	17..... 5 88
15..... 3 24	16..... 4 05	17..... 5 20	18..... 6 69
16..... 3 75	17..... 4 57	18..... 5 88	20..... 7 70
18..... 4 41	18..... 5 08	20..... 7 00	22..... 8 96
	20..... 6 16		24.....10 50

2 INCH.	2¼ INCH.	2½ INCH.	3 INCH.
No. 10.....\$3 29	No. 12.....\$4 41	No. 14.....\$5 85	No. 16.....\$7 87
11..... 3 68	13..... 4 86	15..... 6 40	18..... 9 55
12..... 3 98	14..... 5 35	16..... 7 00	20.....12 10
13..... 4 38	15..... 5 85	17..... 7 70	22.....14 70
14..... 4 83	16..... 6 40	18..... 8 49	24.....18 20
15..... 5 29	17..... 7 06	20.....10 29	26.....22 40
16..... 5 81	18..... 7 73	22.....11 62	
17..... 6 44	20..... 9 17	24.....13 65	
18..... 7 06	22.....10 50		
20..... 8 43			
22..... 9 80			
24.....11 20			

Round Head Brass Screws same list as Flat Head Brass Screws.

# SCREWS.



## Silver Plated.

FLAT HEAD.

Per Gross.

Numbers . . . . .	2	3	4	5	6	7	8	9	10	11	12	13	14
Length, inches, $\frac{3}{8}$	\$o 55	o 55	o 55	o 55	....	....	....	....	....	....	....	....	....
Length, inches, $\frac{1}{2}$	....	55	55	58	o 60	....	....	....	....	....	....	....	....
Length, inches, $\frac{5}{8}$	....	....	56	60	o 63	o 66	o 69	....	....	....	....	....	....
Length, inches, $\frac{3}{4}$	....	....	....	....	66	69	72	77	o 81	....	....	....	....
Length, inches, $\frac{7}{8}$	....	....	....	....	69	72	77	81	84	o 93	1 00	....	....
Length, inches, 1	....	....	....	....	72	76	81	87	91	97	1 07	....	....
Length, inches, $1\frac{1}{4}$	....	....	....	....	....	....	91	97	1 02	1 09	1 18	1 30	1 40
Length, inches, $1\frac{1}{2}$	....	....	....	....	....	....	1 00	1 07	1 14	1 22	1 30	1 44	1 58

## Nickel Plated.

ROUND HEAD

Per Gross.

Numbers . . . . .	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20
Length, in., $\frac{1}{2}$	\$o 84	o 93	1 07	1 20	1 35	1 50	1 60	....	....	....	....	....	....	....	....	....
Length, in., $\frac{5}{8}$	88	98	1 13	1 25	1 40	1 55	1 63	1 80	1 90	....	....	....	....	....	....	....
Length, in., $\frac{3}{4}$	90	1 04	1 16	1 30	1 44	1 57	1 65	1 82	1 95	2 30	2 45	....	....	....	....	....
Length, in., $\frac{7}{8}$	....	....	1 21	1 34	1 47	1 61	1 69	1 85	2 00	2 35	2 50	2 75	3 10	....	....	....
Length, in., 1	....	....	1 27	1 40	1 53	1 68	1 75	1 94	2 10	2 45	2 70	2 95	3 35	....	....	....
Length, in., $1\frac{1}{4}$	....	....	1 50	1 55	1 65	1 80	1 95	2 10	2 25	2 60	2 80	3 24	3 68	4 00	4 40	....
Length, in., $1\frac{1}{2}$	....	....	....	1 88	1 94	2 05	2 15	2 38	2 50	2 85	3 15	3 50	3 90	4 40	4 80	5 85
Length, in., $1\frac{3}{4}$	....	....	....	....	2 15	2 20	2 30	2 40	2 55	2 80	3 12	3 45	3 80	4 10	4 60	5 10 6 05
Length, in., 2	....	....	....	....	....	2 40	2 50	2 70	3 00	3 45	3 75	4 05	4 40	5 00	5 40	6 50



## Side Knob.

7-16 inch, No. 9, Blued or Tinned . . . . . Per gross, \$

## SCREWS.



## Machine.

ROUND HEAD

Per Gross.

Threads to the inch.....	32	32	24, 30, 32	24	24	20, 24	16, 18	16, 18, 20	16, 18	16
Nos.....	4	6	8	10	12	14	16	18	20	24
Length, inches, $\frac{1}{2}$ .....	\$0 55	\$0 55	\$0 65	\$0 75	\$0 85	\$0 95	\$1 05	\$1 15	\$1 20	....
Length, " $\frac{5}{8}$ .....	60	60	65	75	85	95	1 05	1 15	1 20	....
Length, " $\frac{3}{4}$ .....	65	65	65	75	85	95	1 05	1 20	1 25	\$1 50
Length, " $\frac{7}{8}$ .....	....	....	....	85	95	1 05	1 10	1 25	1 30	1 60
Length, " 1.....	....	....	....	95	95	1 10	1 15	1 30	1 35	1 70
Length, " $1\frac{1}{4}$ .....	....	....	....	....	1 00	1 20	1 25	1 35	1 45	1 90
Length, " $1\frac{1}{2}$ .....	....	....	....	....	....	1 30	1 35	1 45	1 60	2 00



FLAT HEAD.

Per Gross.

Threads to the inch.....	32	30	24, 32	24
Nos.....	6	8	10	12
Length, inches, $\frac{1}{2}$ .....	\$0 55	\$0 65	\$0 75	\$0 85
Length, " $\frac{5}{8}$ .....	60	65	75	85
Length, " $\frac{3}{4}$ .....	65	65	75	85
Length, " $\frac{7}{8}$ .....	85	85	85	95
Length, " 1.....	95	95	95	95
Length, " $1\frac{1}{4}$ .....	....	....	....	1 00

## SET SCREWS.

Case Hardened.

Per Hundred.

Diameter, inches.....	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	$\frac{3}{4}$
No. Threads.....	24	20	14, 16	14	12, 13	12	11, 12	10
Length, inches, $\frac{3}{4}$ .....	\$2 00	\$2 20	\$2 50	\$2 90	\$3 40	....	....	....
Length, " 1.....	2 15	2 35	2 65	3 10	3 60	\$4 25	\$5 25	\$7 50
Length, " $1\frac{1}{4}$ .....	2 30	2 50	2 80	3 30	3 80	4 50	5 25	7 50
Length, " $1\frac{1}{2}$ .....	2 45	2 65	2 95	3 50	4 00	4 75	5 50	7 50
Length, " $1\frac{3}{4}$ .....	2 60	2 80	3 10	3 70	4 20	5 00	5 75	8 00
Length, " 2.....	2 75	2 95	3 25	3 90	4 40	5 25	6 00	8 50
Length, " $2\frac{1}{4}$ .....	....	3 10	3 40	4 10	4 60	5 50	6 25	9 00
Length, " $2\frac{1}{2}$ .....	....	....	3 55	4 30	4 80	5 75	6 50	9 50
Length, " $2\frac{3}{4}$ .....	....	....	....	4 50	5 00	6 00	6 75	10 00
Length, " 3.....	....	....	....	....	5 20	6 25	7 00	10 50

WROUGHT BOAT SPIKES.

[illegible]

## NAILS.



Cut.

Common Cut Nails, 10d to 60d are standard.....					Per keg, \$
Clinch, 50 lb. kegs.....	2	2 1/4	2 1/2	2 1/2	3 in., larger.
Per keg.....	\$				

All other kinds and sizes advance on rate of Cut Nails as follows.

Sizes.....	10	8	6	5	4	3	3d Fine
Common Cut.....	Per keg, \$....	0 25	50	75	75	1 50	....
Box.....	" 75	1 00	1 25	1 50	1 50	2 25	2 00
Brad Head.....	" 1 00	1 25	1 50	1 75	1 75	....	....
Casing.....	" 75	1 00	1 25	....	....	....	....

Headless, Fine Finishing.....	Per keg, \$1 25
-------------------------------	-----------------

Cut Spikes, 5, 6, 7 and 8 inch.....	Per keg, \$0 25
-------------------------------------	-----------------

Fence Nails, Round and Flat Heads.....Same price as Common Cut.

## Boat.

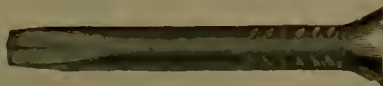
GALVANIZED

Length, inches.....	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	2	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	3	4
Per pound.....\$								

COPPER.

Length, inches . . . . .	1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	2	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	3
Per pound . . . . . \$								

## Track.

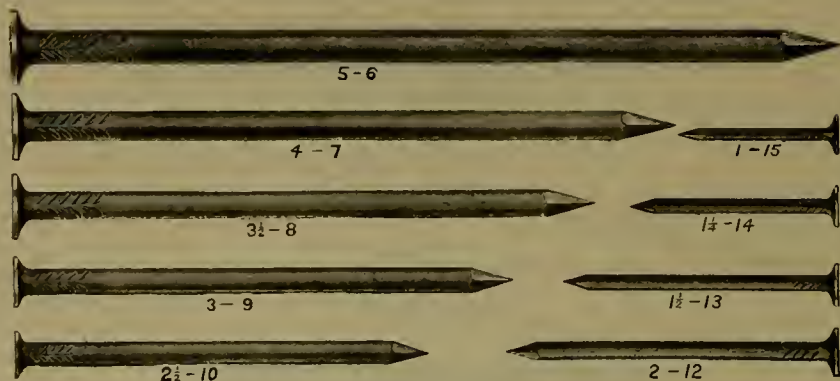


Countersunk Head, Chisel Point.

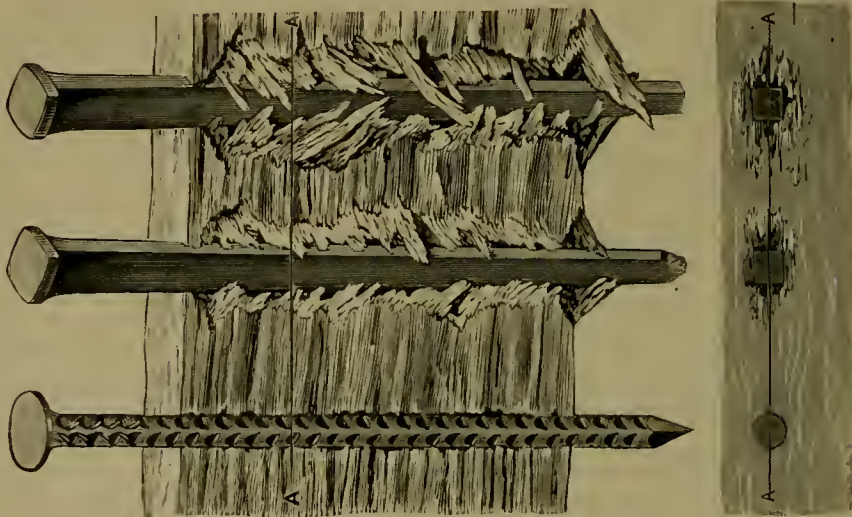
14	inch diameter by 2, 2 $\frac{1}{4}$ , 2 $\frac{1}{2}$ , 3 and 3 $\frac{1}{2}$ inches long.....	Per lb., \$o	13 $\frac{1}{2}$
5 16	" " 2 $\frac{1}{2}$ , 3 and 3 $\frac{1}{2}$ inches long.....	"	12
38	" .....	"	10 $\frac{1}{2}$

In 25 lb. boxes.

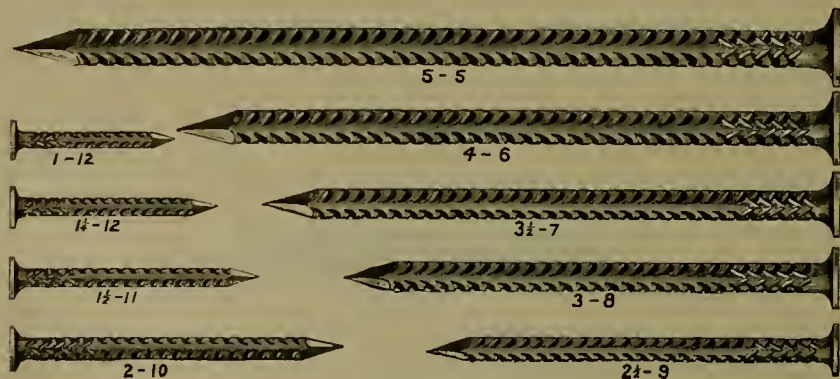
## HP STEEL WIRE NAILS.



Flat Head.



Cut showing comparative effect on Wood in driving the Common Cut and Wire Nail.



Flat Head, Barbed.

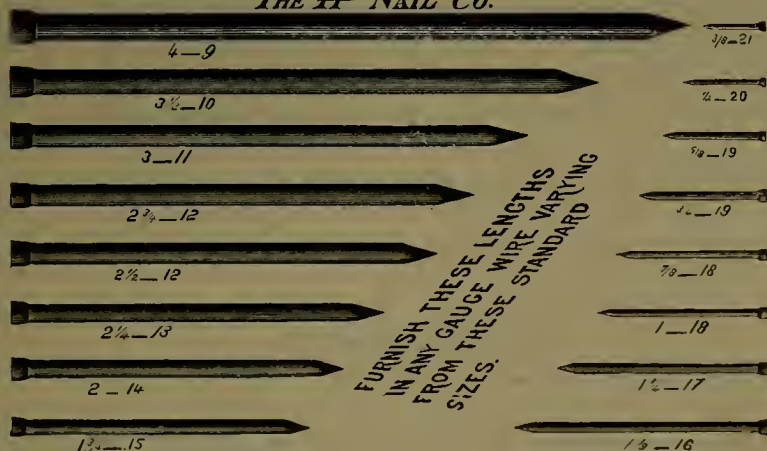
Cuts full size.

See prices Page 265.



# HP STEEL WIRE NAILS.

THE HP NAIL CO.



CAST STEEL WIRE BRADS AND FINISHING NAILS

## Flat Head Wire Nails.

1/2 inch, No. 20	5/8 inch, No. 17 18	3/4 inch, Nos. 17 18 19	7/8 inch, Nos. 15 16 17 18
Per pound.\$			
1 inch, Nos. 13 14 15 16 17	1 1/4 inch, Nos. 12 13 14 15 16	1 1/2 inch, Nos. 12 13 14 15	
Per pound.\$			
1 3/4 inch, Nos. 12 13 14 15	2 inch, Nos. 12 13 14	2 1/4 inch, Nos. 10 11 12	
Per pound.\$			
2 1/2 inch, Nos. 10 11 12	3 inch, No. 7 10	3 1/2 inch, No. 7	4 inch, No. 6
Per pound.\$			

## Wire Brads or Finishing Nails.

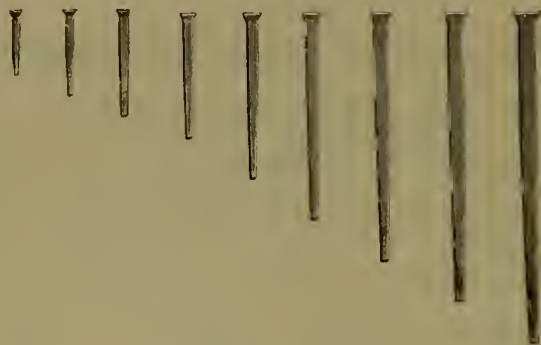
3/8 inch, No. 21	1/2 inch, No. 20	5/8 inch, No. 20	3/4 inch, No. 17 19	7/8 inch, No. 18
Per pound.\$				
1 inch, No. 18	1 1/4 inch, No. 17	1 1/2 inch, No. 16	1 3/4 inch, No. 15	2 inch, No. 14
Per pound.\$				

## Flat Head Barbed Wire Nails.

7/8 inch, No. 14 16	1 1/4 inch, No. 14	1 1/2 inch, No. 13	2 inch, No. 11	2 1/4 inch, No. 9 10
Per pound.\$				

In one pound papers or bulk. All sizes and kinds made to order.

## NAILS.



## Finishing.

Length, inches....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per lb.....	\$o 32	26	22	20	18	16	15	14	13	13



## Patent Brads.

				Half Weight.						
Length, inches....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per dozen papers..	\$o 60	65	72	80	90	1 00	1 26	1 82	2 25	2 43

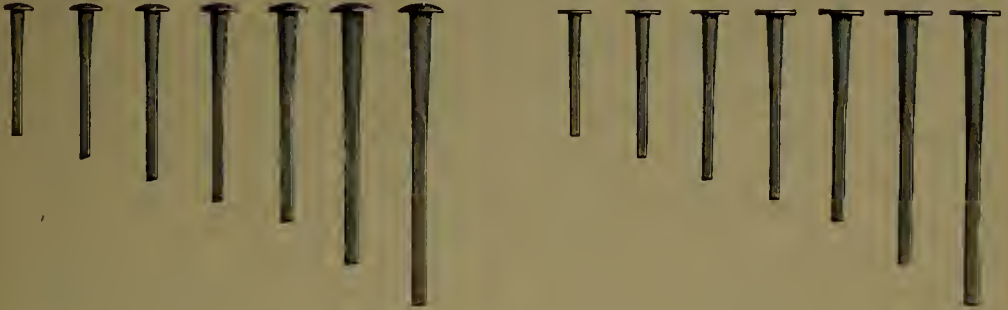


## Common Brads.

Half Weight.

Length and prices same as Patent Brads.

# NAILS.

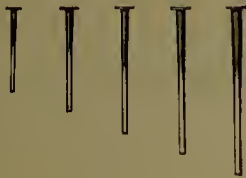


Trunk.

Clout.

## Trunk and Clout.

Length, inches.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Per pound.....	\$o 32	26	22	20	18	15	14	13	12
Tinned Clout, 1 inch.....									Per lb., \$o 24



Chair Nails.



Cigar Box Nails.

## Chair.

Length, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Per pound.....	\$o 52	36	30	26	24	22

## Cigar Box.

Length, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Per pound.....	\$o 36	32	28	26	24	22



Hungarian.



Hob.

## Hungarian.

Half Weight, American Iron, Blued.

Size, ounces.....	4	6	8	10	12	14
Per dozen papers.....	\$o 45	55	65	75	90	1 00

American Iron. In pound and half pound papers.

Length, inches.....	$\frac{3}{8}$	$3\frac{1}{2}$ -8	4-8	5-8	6-8	7-8	8-8
Per pound.....	\$o 22	22	20	20	20	20	20

## Hob.

Square Head.

Length, inches, 4-8, $4\frac{1}{2}$ and 5-8.....	Per lb, \$
--	------------

# EMERY WHEELS. Round, Square or Bevel Edge.

Thickness of Wheels in Inches.

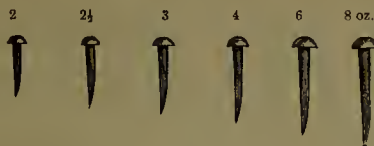
Diameter, Inches.

Revolutions per Minute.

	1-4	1-2	3-4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4
\$0 38	\$0 40	\$0 45	\$0 50	\$0 55	\$0 60	\$0 65	\$0 70	\$0 75	\$0 80	\$0 85	\$0 90	\$0 95	\$1 00	\$1 05	\$1 10	
14,400	44	50	56	62	68	74	80	86	92	98	1 04	1 10	1 16	1 22	1 28	1 34
10,800	65	70	78	85	93	1 00	1 08	1 15	1 22	1 30	1 38	1 45	1 53	1 60	1 68	1 75
8,640	79	85	97	1 10	1 22	1 35	1 48	1 60	1 72	1 85	1 98	2 10	2 23	2 35	2 48	2 60
7,200	96	1 10	1 38	1 65	1 93	2 20	2 48	2 75	3 03	3 30	3 58	3 85	4 13	4 40	4 68	4 95
5,400	1 20	1 40	1 80	2 20	2 60	3 00	3 40	3 80	4 20	4 60	5 00	5 40	5 80	6 20	6 60	7 00
4,320	1 43	1 75	2 40	3 05	3 70	4 35	5 00	5 65	6 30	6 95	7 60	8 25	8 90	9 55	10 20	10 85
3,600	1 89	2 30	3 12	3 95	4 78	5 60	6 43	7 25	8 08	8 90	9 73	10 55	11 38	12 20	13 03	13 85
3,086	2 00	2 45	3 33	4 20	5 08	5 95	6 83	7 70	8 58	9 45	10 33	11 20	12 08	12 95	13 83	14 70
2,880	2 12	2 60	3 55	4 50	5 45	6 40	7 35	8 30	9 25	10 20	11 15	12 10	13 95	14 00	14 95	15 90
2,700	....	3 15	4 38	5 60	6 83	8 05	9 28	10 50	11 73	12 95	14 18	15 40	16 63	17 85	19 08	20 30
2,400	....	3 70	5 15	6 60	8 05	9 50	10 95	12 40	13 85	15 30	16 75	18 20	19 65	21 10	22 55	24 00
2,160	....	4 00	5 68	7 35	9 03	10 70	12 38	14 05	15 73	17 40	19 08	20 75	22 43	24 10	25 78	27 45
1,800	....	6 20	8 45	10 70	12 95	15 20	17 45	19 70	21 95	24 20	26 45	28 70	30 95	33 20	35 45	37 70
1,570	....	8 00	10 85	13 70	16 55	19 40	22 25	25 10	27 95	30 80	33 65	36 50	39 35	42 20	45 05	47 90
1,350	....	9 50	13 25	17 00	20 75	24 50	28 25	32 00	35 75	39 50	43 25	47 00	50 75	54 50	58 25	62 00
1,222	....	11 00	15 50	20 00	24 50	29 00	33 50	38 00	42 50	47 00	51 50	56 00	60 50	65 00	69 50	74 00
1,080	....	13 00	18 62	24 25	29 87	35 50	41 12	46 75	52 37	58 00	63 62	69 25	74 88	80 50	86 12	91 75
1,000	....	15 00	22 00	29 00	36 00	43 00	50 00	57 00	64 00	71 00	78 00	85 00	92 00	99 00	106 00	113 00
917	....	33 00	48 50	64 00	79 50	95 00	110 50	126 00	141 50	157 00	172 50	188 00	203 50	219 00	234 50	250 00
611																

To insure the satisfactory filling of an order, customers must state the diameter and face of the wheel, the diameter of mandrel hole, the shape of face (whether square, round or beveled), the *general class* and the *special* or *exact* work the wheel is to be used for.

## TACKS.



Cuts full size.

## Gimp and Lace.

Half Weight, Swedes Iron.

Size, ounces.....	1½	2	2½	3	4	6	8	10	12	14	16
Per dozen papers.. \$	65	70	75	80	90	1 00	1 10	1 20	1 35	1 45	1 55



## Double Pointed.

Nos.....	3	9	10	11	12	14
Per dozen boxes (144 in a box)..... \$	1 80	1 20	1 20	1 20	1 44	1 80

## STAPLES.



## Barbed Blind.

Length, inches.....	¾	1	1½	2
Per pound..... \$				

## Bed Spring.

Steel, 7/8 inch long..... Per pound, \$

## SHEEP SHEARS.



No. 38.

## Ward & Paynes.

No. 38.	Solid Neck, 6, 6½, 7 and 7½ inch Blade.....	Per dozen, \$
No. 175.	Solid Steel, 6, 6½, 7 and 7½ ".....	"



## TACKS.



Cuts Full Size.

## Cut.

Half Weight, American Iron.

Size, ounces.....	1½	2	2½	3	4	6	8	10	12	14	16	18	20	22	24
Per doz. Papers..	\$0 45	0 45	0 50	0 55	0 60	0 65	0 75	0 80	0 90	1 00	1 10	1 20	1 30	1 40	1 50

One dozen papers in a package.

## Upholsterers'.

Full Weight, Swedes Iron.

Size, ounces.....	1½	2	2½	3	4	6	8	10	12	14	16	18	20	22	24
Per doz. Papers..	\$0 90	1 00	1 10	1 20	1 40	1 60	1 90	2 20	2 50	2 80	3 00	3 30	3 60	3 80	4 00

One dozen papers in a package.

## Copper.

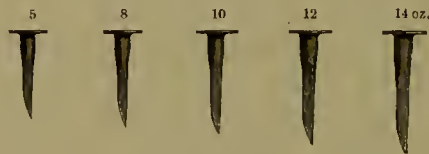
In Pound and Half Pound Papers.

Length, inches.....	¾	½	⅝	¾	⅞	1	1¼
Per pound.....	\$						

## Leathered Head Carpet.

Size, ounces.....	6	8	10	12
¾ Count (100 Tacks in a paper), per dozen papers.....	\$0 26	0 28	0 30	0 32

One dozen papers in a package.



Cuts Full Size.

## Large Head Carpet.

Half Weight, American Iron.

Size, ounces.....	6	8	10	12	14
Per dozen papers.....	\$0 65	0 75	0 80	0 90	1 00

One dozen papers in a package.

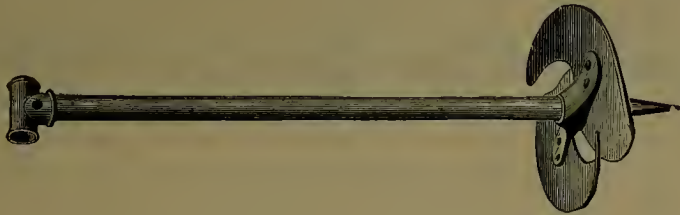
## Large Head Carpet.

Tinned, Half Weight, Swedes Iron.

Size, ounces.....	6	8	10	12	14
Per dozen papers.....	\$1 00	1 15	1 30	1 50	1 65

One dozen papers in a package.

POST HOLE AUGERS.



Vaughn's, Hollow Tube.

Size, inches.....	6	7	8
Per dozen.....	.\$		

POST HOLE DIGGERS.

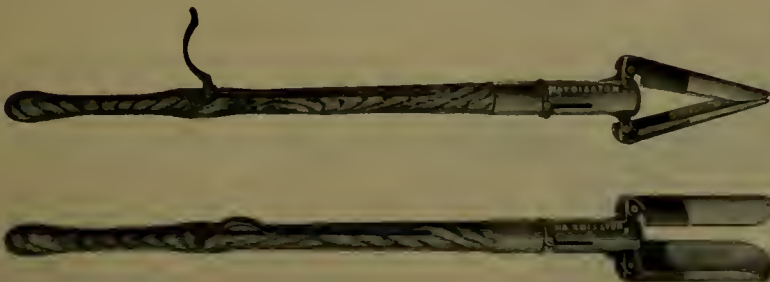


Leed's, Champion.

6 inch.....	.....	Each, \$
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Lee's, Excelsior.

No. 1.	With Round Tamper.....	Each, \$
No. 2.	“ “ “ and Chisel.....	“



Samson.

Each.....	.....	.\$
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## BARB WIRE.



### Two Point.

With Barbs  $2\frac{1}{2}$  inches apart.

All Steel.....	Painted.	Galvanized.
Per pound.....	\$	



### Four Point.

With Barbs 3 inches apart.

All Steel.....	Painted.	Galvanized.
Per pound.....	\$	

## Steel Fence Staples.



Length, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$
No. to the pound.....	110	100	90

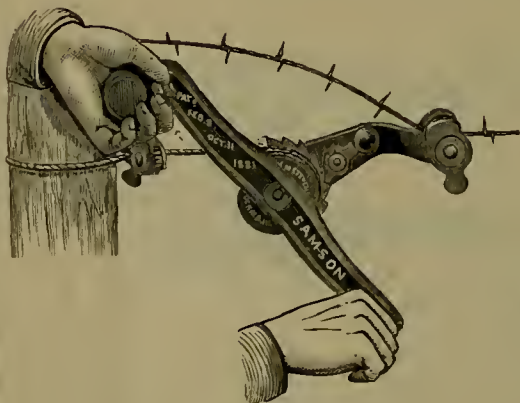
$1\frac{1}{4}$  and  $1\frac{1}{2}$  inch for hard wood posts.  $1\frac{3}{4}$  inch for soft wood posts.

Black.....	Per lb., \$
Galvanized.....	"

In kegs of 100 lbs. each.

## WIRE STRETCHERS.

### Samson.



For stretching wire, pass the end of rope around the post and secure with hook; place wire in clamp on machine.

For splicing, place one wire in clamp on end of rope about two feet from its end, and place the other wire in clamp on machine.

To loosen the stretcher after tightening the wire, simply invert it without letting go the handles, and tighten enough to let the pawl drop from the ratchet—then let go the handles

Per dozen.....\$

# CIPHER TELEGRAPH SENTENCES.

"Send by Express immediately."	Austria
"Send by Freight immediately."	Bavaria
"Send by Steamer immediately."	Belgium
"Send by Ship."	Denmark
"Send by Express soon as possible."	England
"Send by Freight soon as possible."	France
"Send by Steamer soon as possible."	Greece
"Add to my (or our) order."	Hanover
"If order is not shipped, add the following."	Holland
"Send by Rail without delay."	Spain

## TELEGRAPH CIPHER

### For Inches and Fractions of Inches.

$\frac{1}{2}$ —Udder.	$\frac{3}{8}$ —Tacks.	$2\frac{1}{2}$ —Cherry.	$5\frac{1}{4}$ —Laurel.	$8\frac{1}{8}$ —Race.
$\frac{3}{2}$ —Umbrella.	$\frac{1}{10}$ —Tapes.	$2\frac{5}{8}$ —Church.	$5\frac{3}{8}$ —Lemon.	$8\frac{1}{4}$ —Rawle.
$\frac{5}{2}$ —Unicorn.		$2\frac{3}{4}$ —Clinton.	$5\frac{1}{2}$ —Linden.	$8\frac{3}{8}$ —Read.
$\frac{7}{2}$ —Universe.	$\frac{1}{8}$ —Walnut.	$2\frac{7}{8}$ —Crown.	$5\frac{5}{8}$ —Lilly.	$8\frac{1}{2}$ —Ritner.
$\frac{9}{2}$ —Unison.	$\frac{1}{4}$ —Warren.		$5\frac{3}{4}$ —Logan.	$8\frac{5}{8}$ —Rose.
$\frac{11}{2}$ —Unit.	$\frac{3}{8}$ —Water.	$3\frac{1}{8}$ —Front.	$5\frac{7}{8}$ —Lombard.	$8\frac{3}{4}$ —Rush.
$\frac{13}{2}$ —Umber.	$\frac{1}{2}$ —Weaver.	$3\frac{1}{4}$ —Federal.		$8\frac{7}{8}$ —Rye.
$\frac{15}{2}$ —Umpire.	$\frac{5}{8}$ —West.	$3\frac{3}{8}$ —Filbert.	$6\frac{1}{8}$ —Market.	
$\frac{17}{2}$ —Usher.	$\frac{3}{4}$ —Wood.	$3\frac{1}{2}$ —Franklin.	$6\frac{1}{4}$ —Master.	$9\frac{1}{8}$ —Spruce.
$\frac{19}{2}$ —Uncle.	$\frac{7}{8}$ —Willow.	$3\frac{5}{8}$ —Fayette.	$6\frac{3}{8}$ —Marshall.	$9\frac{1}{4}$ —Sampson.
$\frac{21}{2}$ —Union.		$3\frac{3}{4}$ —Farr.	$6\frac{1}{2}$ —Melon.	$9\frac{3}{8}$ —Shipper.
$\frac{23}{2}$ —Upper.	$1\frac{1}{8}$ —Broad.	$3\frac{7}{8}$ —Fulton.	$6\frac{5}{8}$ —Minor.	$9\frac{1}{2}$ —Small.
$\frac{25}{2}$ —Usage.	$1\frac{1}{4}$ —Bank.		$6\frac{3}{4}$ —Myrtle.	$9\frac{5}{8}$ —Spring.
$\frac{27}{2}$ —Under.	$1\frac{3}{8}$ —Beaver.	$4\frac{1}{8}$ —Green.	$6\frac{7}{8}$ —Mulberry.	$9\frac{3}{4}$ —South.
$\frac{29}{2}$ —Uniform.	$1\frac{1}{2}$ —Bond.	$4\frac{1}{4}$ —Gaskill.		$9\frac{7}{8}$ —Summer.
	$1\frac{5}{8}$ —Brook.	$4\frac{3}{8}$ —Gay.	$7\frac{1}{8}$ —Pine.	
$\frac{1}{16}$ —Tick.	$1\frac{3}{4}$ —Brown.	$4\frac{1}{2}$ —George.	$7\frac{1}{4}$ —Park.	$10\frac{1}{2}$ —Sylvan.
$\frac{3}{16}$ —Tom.	$1\frac{7}{8}$ —Button.	$4\frac{5}{8}$ —German.	$7\frac{3}{8}$ —Pear.	$11\frac{1}{2}$ —Symbol.
$\frac{5}{16}$ —Troy.		$4\frac{3}{4}$ —Girard.	$7\frac{1}{2}$ —Poplar.	$12\frac{1}{2}$ —Sylph.
$\frac{7}{16}$ —Timothy.	$2\frac{1}{8}$ —Chestnut.	$4\frac{7}{8}$ —Grape.	$7\frac{5}{8}$ —Plum.	$13\frac{1}{2}$ —Sympathy.
$\frac{9}{16}$ —Tubs.	$2\frac{1}{4}$ —Cedar.		$7\frac{3}{4}$ —Prince.	
$\frac{11}{16}$ —Tinker.	$2\frac{3}{8}$ —Center.	$5\frac{1}{8}$ —Locust.	$7\frac{7}{8}$ —Prune.	

## TELEGRAPH CIPHER

## For Use in Ordering Nails.

1	Keg. . Wabble.	3d.	4d.	5d.	6d.	8d.	10d.	12d.	16d.	20d.	30d.	40d.	50d.	60d.
			Wagner.	Wager.	Whale.	War.	Warfare.	Wabash.	Warrior.	Wedding.	Waldo.	Wales.	Wallace.	Wisdom.
2	" " . Wad.		Walpole.	Waggish.	Walrus.	Warden.	Warsaw.	Warwick.	Worms.	Watkins.	Watson.	Wayne.	Wafer.	Wag.
3	" " . Waddle.		Wagon.	Wallop.	Waltz.	Wander.	Warp.	Wash.	Wheeze.	Waste.	Watch.	Whipper.	Wave.	Wax.
4	" " . Wade.		Waylay.	Wantage.	Whisky.	Weapon.	Weasel.	Webber.	Waiter.	Webster.	Welch.	Wells.	Wesley.	Weigh.
5	" " . Waffle		Welcome.	Wanton.	Weld.	Wharf.	Whelp.	Whack.	Wallet.	Whiff.	Wig.	Wife.	Whist.	Wise.
10	" " . Waft.		Wit.	Watchman.	Widow.	Wilder.	Wilcox.	Wiley.	Wizard.	Wilson.	Winslow.	Wink.	Winter.	Wipe.
15	" " . Yam.		Yarn.	Yak.	Yankee.	Yates.	Yale.	Yazoo.	Yager.	Yacht.	Yard.	Yawl.	Yawn.	Yellow.
20	" " . Yawning.		Yeddow.	Yester.	Yearn.	Yell.	Yield.	Young.	Vonder.	Youth.	Yoke.	Yean.	Year.	Yeast.
25	" " . Yonker.		Yelk.	Yule.	Yeoman.	Yerk.	Yew.	Yond.	Yarrow.	Yardstick.	Yearling.	Yaws.	Yesterday.	Youngster.
30	" " . Zaccho.		Zaaman.	Zend.	Zabad.	Zabdi.	Zed.	Zacher.	Zaffer.	Zadox.	Zaham.	Zair.	Zalaph.	Zalmon.
40	" " . Zax.		Zambis.	Zeta.	Zamoth.	Zouave.	Zarah.	Zany.	Zambo.	Zeal.	Zealot.	Zebra.	Zest.	Zealous.
50	" " . Zechin		Zenith.	Zuffalo.	Zephyr.	Zigzag.	Zincky.	Zodiac.	Zounds.	Zoology.	Zion.	Zero.	Zone.	Zattu.
60	" " . Keek.		Katie.	Kingdom.	Kasson.	Kangaroo.	Kearney.	Kearsage.	Kail.	Kerner.	Kedron.	Keep.	Kettle.	Key.
75	" " . Kelpie.		Kelly.	Knaggy.	Kendal.	Kent.	Kennedy.	Kennel.	Keen.	Kidney.	Kimbo.	King.	Kick.	Kidnap.
100	" " . Kersey		Kitchen.	Knocker.	Kindred.	Kimball.	Kirkwood.	Kitten.	Kind.	Knee.	Knell.	Kiss.	Kill.	Kite.
150	" " . Ketchup.		Knap.	Kraken.	Knox.	Knave.	Knuckle.	Knead.	Knife.	Knight.	Knit.	Knob.	Knock.	Koran.
200	" " . Kilderkin.		Keel.	Kruller.	Kedge.	Kelson.	Keeper.	Kernel.	Keno.	Keystone.	Kilt.	Kirk.	Klick.	Kink.

## How to Use the Cipher.

Follow the line on which is the number of kegs wanted until you come under the desired size; the word at the junction denotes the quantity and size you wish to order. If Finishing Nails are wanted, add the word "Finishing" after the Cipher word denoting size and quantity. The same rule applies to Fence, Box, Casing, or Fine Nails. Thus: To order 1 keg 3d fine, 3 kegs 6d nails, 5 kegs 12d Fence, 15 kegs 20d Nails, and 2 kegs 30d Nails, the telegram should read, Wabble fine, Waltz, Whack fence, Yacht, Watson.



# TELEGRAPH CIPHER

## For Use in Ordering Galvanized Pipe.

25 Feet.....	1/4 inch.	3/8 inch.	1/2 inch.	3/4 inch.	1 inch.	1 1/4 inch.	1 1/2 inch.	2 inch.
50 ".....	Teapot.	Tempest.	Thomas.	Theater.	Tiger.	Talent.	Tipton.	Topsey.
75 ".....	Tableau.	Tactics.	Tadpole.	Taffey.	Tag.	Tailor.	Tallow.	Tambour.
100 ".....	Teak.	Techy.	Tedious	Telescope.	Temper.	Tenant.	Tepid.	Terrier.
150 ".....	Thaw.	Theme.	Thicket.	Thorax.	Thrash.	Thug.	Thwack.	Thyme.
200 ".....	Tickle.	Tidy.	Tierce.	Tiff.	Tilbury.	Timbrel.	Tingle.	Tipsy.
250 ".....	Tobacco.	Tocsin.	Toddy.	Toilet.	Token.	Tolerate.	Tomato.	Tonic.
300 ".....	Tract.	Tracle.	Tribe.	Trophy.	Truant.	Trustee.	Truth.	Tryer.
400 ".....	Tuber.	Tucker.	Tuft.	Tug.	Tumble.	Tune.	Turban.	Tush.
500 ".....	Twaddle.	Tweak.	Twig.	Twin.	Twinkle.	Twist.	Twich.	Twitter.
1,000 ".....	Vacant.	Vagabond.	Vagrant.	Vain.	Valance.	Vampire.	Vandyke.	Vapor.
2,000 ".....	Veal.	Vedette.	Veer.	Vegetable.	Vehicle.	Velvet.	Veneer.	Verb.
5,000 ".....	Viaduct.	Vibrate.	Vicar.	Vigil.	Villa.	Vine.	Violet.	Viper.
	Vocal.	Vogue.	Voice.	Volaille.	Vomit.	Vortex.	Votary.	Voucher.
	Vulcanize.	Vulgar.	Vulgarian.	Vulgarity.	Vulnerable.	Vulnary.	Vulpine.	Vulture.

## How to Use the Cipher.

Proceed same as directed in Cipher for Nails, but when the length wanted is not expressed above it must be given in connection with the first line of the cipher column; thus, a telegram for one hundred twenty-five feet half inch galvanized pipe should read one hundred twenty-five feet Thomas.

## TELEGRAPH CIPHER

## For Use in Ordering Black Pipe.

	$\frac{1}{4}$ inch.	$\frac{3}{8}$ inch.	$\frac{1}{2}$ inch.	$\frac{3}{4}$ inch.	1 inch.	$1\frac{1}{4}$ inch.	$1\frac{1}{2}$ inch.	2 inch.	$2\frac{1}{2}$ inch.	3 inch.	$3\frac{1}{2}$ inch.	4 inch.
25 feet...	Soloman.	Super.	Sabbath	Salmon.	Salvation.	Saxon.	Saint.	Scott.	Scarlet.	Scotch.	Schooner.	Senate.
50 "	Sabine.	Sabot.	Sachem.	Sacred.	Sadden.	Sadducee.	Sagacity.	Sailor.	Salient.	Saloon.	Sattish.	Salute.
75 "	Scabby.	Scaffold.	Scalpel.	Scamp.	Scandal.	Scandent	Scanty.	Scape.	Scatter.	Schedule.	Scholar.	School.
100 "	Sedan.	Sedate.	Seduce.	Segment.	Seizein.	Selish.	Selvenge.	Seminal	Seminary.	Senna.	Sensation	Sentinel.
150 "	Shackle.	Shadow.	Shaggy.	Shamrock.	Sharps.	Sheath.	Shckel.	Shelter.	Shepherd.	Sherbet.	Sheriff.	Shield.
200 "	Siberian.	Sibyl.	Sicken.	Sickly.	Sierra.	Sifter.	Signal	Signpost	Silent.	Sinful.	Sinner.	Siren.
250 "	Skate.	Skeleton.	Skeptic.	Sketch.	Skewer.	Skiff.	Skinner.	Skirmish.	Skirts.	Skittish.	Skulk.	Skylark.
300 "	Slander.	Slang.	Slapper.	Slashed.	Slattern.	Sleigh.	Slender.	Slippers.	Slogan.	Sloppy.	Slopshop.	Sloven.
500 "	Smart.	Smatter.	Smear.	Smells.	Smirk.	Smiter.	Smitten.	Smoke.	Smooth.	Smoulder.	Smuggler.	Smutty.
1,000 "	Snaffle.	Snake.	Snapper.	Snares.	Snarling.	Sneering.	Sneeze.	Snipes.	Snobbish.	Snooze.	Snoring.	Snowball.
2,000 "	Soaker.	Sobriety.	Sociable	Society.	Socratic.	Sodden	Softness.	Sojourn.	Solace.	Soldier.	Solemn.	Sonnet.
3,000 "	Spacious.	Spaniel.	Sparrow.	Spartan.	Spavin.	Spawning	Specific.	Speckled.	Sphere.	Spider.	Spinach.	Spinster.
5,000 "	Squadron	Squalid.	Squander.	Squaw.	Squeeze.	Squib.	Squill	Squint.	Squire.	Squirm.	Squirrel.	Squirt.
10,000 "	Stagnant.	Stallion.	Stamina	Stammer.	Standish.	Stanhope.	Startle.	Station.	Statuary.	Stencil.	Steward.	Stirrup.
25,000 "	Subdue.	Subject.	Sublet.	Suburb	Succor	Sucking.	Suet	Suffocate.	Sugar.	Suicide.	Sulky.	Sultan.
	Swab.	Swaddle.	Swag.	Swain.	Swallow.	Swamp.	Swarm.	Swath.	Sweet.	Swelter.	Swift.	Swindle.

For explanation of use of Table see Page 275.

## TELEGRAPH CIPHER

For Use in Ordering Sheet Iron.

Gauge.	Width.	Length.	Refined. Black.	Charcoal Black.	Refined Galvanized.	Charcoal Galvanized.
28	24 inch.	72 inch.	Abbott	Baggy.	Calvin	Daniel
28	24 "	84 "	Abide	Baron	Cab	David
28	30 "	72 "	Abyss	Basis	Cadet	Delia
28	30 "	84 "	Actor	Bayou	Call	Dolly
28	36 "	72 "	Acute	Beget	Cap	Dunn
28	36 "	84 "	Adage	Bison	Cargo	Daunt
27	24 "	72 "	Adept	Bugle	Cotton	Dizzy
27	24 "	84 "	Admit	Blaze	Camel	Doubt
27	30 "	72 "	Adorn	Bleek	Calf	Diary
27	30 "	84 "	Affix	Bless	Carry	Depot
27	36 "	72 "	After	Blind	Carpet	Down
27	36 "	84 "	Again	Blunt	Census	Debar
26	24 "	72 "	Agate	Bonny	Chelsea	Decay
26	24 "	84 "	Agent	Booth	Chaste	Demur
26	30 "	72 "	Agnes	Bosom	Cherub	Dimly
26	30 "	84 "	Agony	Bravo	China	Dingy
26	36 "	72 "	Ahead	Bill	Charm	Diver
26	36 "	84 "	Alarm	Bribe	Check	Dixie
24	24 "	72 "	Alban	Buxom	Chemise	Dime
24	24 "	84 "	Alibi	Bylaw	Churn	Drama
24	30 "	72 "	Alive	Byway	Circus	Draw
24	30 "	84 "	Allow	Bangor	Clara	Dread
24	30 "	96 "	Albert	Byre	Cinder	Dreadful
24	36 "	72 "	Aloft	Baffle	Claud	Drink
24	36 "	84 "	Alpha	Banish	Clark	Drive
24	36 "	96 "	Alfred	Bayonet	Clifton	Dross
22	24 "	72 "	Alter	Baby	Clasp	Dunce
22	24 "	84 "	Abut	Baker	Clock	Dust
22	24 "	96 "	Amass	Bawl	Clover	Dutch
22	30 "	72 "	Amber	Baltic	Cloud	Dwarf
22	30 "	84 "	Amity	Barter	Cluster	Duel
22	30 "	96 "	Ample	Betsy	Coffin	Duff
22	36 "	72 "	Amuse	Beans	Copy	Dugan
22	36 "	84 "	Angry	Barber	Corn	Dumb
22	36 "	96 "	Annex	Beef	Corset	Duress
20	24 "	72 "	Ache	Burger	Couch	Duval
20	24 "	84 "	Annul	Bender	Coax	Dwell
20	24 "	96 "	Apply	Betray	Coburg	Daub
20	30 "	72 "	Apron	Berlin	Comfort	Drake
20	30 "	84 "	Arbor	Big	Comic	Drain
20	30 "	96 "	Argus	Blonde	Cork	Drone
20	36 "	72 "	Arise	Bladder	Court	Drouth
20	36 "	84 "	Aroma	Blame	Crape	Drunk
20	36 "	96 "	Arrow	Blister	Crazy	Damp
18	24 "	72 "	Arson	Bluff	Crave	Dream
18	24 "	84 "	Ashes	Boston	Cuba	Deck
18	24 "	96 "	Aspen	Bowels	Curl	Deep
18	30 "	72 "	Afur	Board	Chaff	Drill
18	30 "	84 "	Assav	Boast	Chant	Dark
18	30 "	96 "	Audit	Boil	Chaos	Dane
18	36 "	72 "	Await	Bread	Chasm	Dutchey
18	36 "	84 "	Award	Brush	Chess	Deal
18	36 "	96 "	Awful	Brady	Carol	Duck
16	24 "	72 "	Aged	Broach	Cigar	Drag
16	24 "	84 "	Awake	Bulk	Civil	Dray

## TELEGRAPH CIPHER

For Use in Ordering Sheet Iron.

Gauge.	Width.	Length.	Refined. Black.	Charcoal Galvanized.	Refined Galvanized.	Charcoal Galvanized.
16	24 inch	96 inch.	Assure	Bunyan	Cliff	Dump
16	30 "	72 "	Adner	Burden	Celia	Dance
16	30 "	84 "	Able	Burton	Colic	Disk
16	30 "	96 "	Abuse	Bully	Comet	Dike
16	30 "	120 "	Alabaster	Bump	Compass	Dilate
16	30 "	144 "	Alcove	Bunch	Compel	Diptota
16	36 "	72 "	Apex	Burst	Crony	Drape
16	36 "	84 "	Adapt	Byron	Cupid	Droll
16	36 "	96 "	Amid	Bogus	Card	Dale

Gauge.	Width.	Length.	Refined Black.	Gauge.	Width.	Length.	Refined Black.
14	24 inch.	72 inch.	Finis	12	48 inch.	120 inch.	Foe
14	24 "	84 "	Fix	11	24 "	72 "	Fop
14	24 "	96 "	Flail	11	24 "	84 "	Flour
14	30 "	72 "	Flame	11	24 "	96 "	Fox
14	30 "	84 "	Flask	11	24 "	120 "	Fool
14	30 "	96 "	Flesh	11	30 "	72 "	Fork
14	30 "	120 "	Flanders	11	30 "	84 "	Frank
14	30 "	144 "	Flannel	11	30 "	96 "	Fred
14	36 "	72 "	Float	11	30 "	102 "	Frenzy
14	36 "	84 "	Flock	11	30 "	120 "	Foul
14	36 "	96 "	Flora	11	32 "	84 "	Fuel
14	36 "	120 "	Floss	11	32 "	96 "	Frugal
14	40 "	96 "	Flow	11	32 "	120 "	Froth
14	40 "	120 "	Fluid	11	34 "	84 "	Foam
12	24 "	72 "	Flute	11	34 "	96 "	Fell
12	24 "	84 "	Focus	11	34 "	120 "	Fan
12	24 "	96 "	Fogy	11	36 "	84 "	Factor
12	24 "	120 "	Forge	11	36 "	96 "	Fade
12	30 "	72 "	Forth	11	36 "	120 "	Fame
12	30 "	84 "	Fraud	11	40 "	72 "	Fairy
12	30 "	96 "	Friar	11	40 "	84 "	Fagot
12	30 "	120 "	Frost	11	40 "	96 "	Fairly
12	32 "	72 "	Fanny	11	40 "	120 "	Farce
12	32 "	84 "	Fruit	11	42 "	84 "	Falcon
12	32 "	96 "	Fable	11	42 "	96 "	Fallow
12	32 "	120 "	Faith	11	42 "	120 "	Falter
12	34 "	72 "	False	11	44 "	84 "	Family
12	34 "	84 "	Fancy	11	44 "	96 "	Famous
12	34 "	96 "	Fabric	11	44 "	120 "	Farina
12	34 "	120 "	Faint	11	48 "	84 "	Fatal
12	36 "	84 "	Famish	11	48 "	96 "	Father
12	36 "	96 "	Fashion	11	48 "	120 "	Fathom
12	36 "	120 "	Faust	10	24 "	72 "	Galaxy
12	40 "	84 "	Feeble	10	24 "	84 "	Galena
12	40 "	96 "	Female	10	24 "	96 "	Galore
12	40 "	120 "	Fence	10	24 "	120 "	Gamble
12	42 "	84 "	Fibre	10	30 "	72 "	Gargle
12	42 "	96 "	Figs	10	30 "	84 "	Garlic
12	42 "	120 "	Fiddle	10	30 "	96 "	Giddy
12	44 "	84 "	Finger	10	30 "	120 "	Gaunt
12	44 "	96 "	Fish	10	32 "	72 "	Gaudy
12	44 "	120 "	Flush	10	32 "	84 "	Gilder
12	48 "	84 "	Flag	10	32 "	96 "	Gimlet
12	48 "	96 "	Flood				

# TELEGRAPH CIPHER

For Use in Ordering Sheet Iron.

Gauge.	Width.	Length.	Refined Black.	Gauge.	Width.	Length.	Refined Black.
10	32 inch.	120 inch.	Gipsy	$\frac{8}{16}$	30 inch	84 inch.	Hand
10	32 "	144 "	Girdle	"	30 "	96 "	Happy
10	34 "	72 "	Giver	"	30 "	120 "	Harass
10	34 "	84 "	Glance	"	32 "	72 "	Harem
10	34 "	96 "	Gloom	"	32 "	84 "	Harm
10	34 "	120 "	Gloss	"	32 "	96 "	Harper
10	36 "	72 "	Gnaw	"	32 "	120 "	Hasty
10	36 "	84 "	Gospel	"	34 "	72 "	Harsh
10	36 "	96 "	Gothic	"	34 "	84 "	Haven
10	36 "	120 "	Gouge	"	34 "	96 "	Hazard
10	40 "	72 "	Gouty	"	34 "	120 "	Hearse
10	40 "	84 "	Grand	"	36 "	72 "	Heart
10	40 "	96 "	Grange	"	36 "	84 "	Hedge
10	40 "	120 "	Grate	"	36 "	96 "	Heed
10	42 "	84 "	Grassy	"	36 "	120 "	Heels
10	42 "	96 "	Goblet	"	40 "	72 "	Help
10	42 "	120 "	Goblin	"	40 "	84 "	Hermit
10	44 "	84 "	Grace	"	40 "	96 "	Hidden
10	44 "	96 "	Gratis	"	40 "	120 "	Hindoo
10	44 "	120 "	Greedy	"	42 "	84 "	Hoary
10	48 "	84 "	Glum	"	42 "	96 "	Hoax
10	48 "	96 "	Glean	"	42 "	120 "	Honor
10	48 "	120 "	Gilt	"	44 "	84 "	Huddle
$\frac{8}{16}$	24 "	72 "	Habit	"	44 "	96 "	Hovel
$\frac{8}{16}$	24 "	84 "	Hackle	"	44 "	120 "	Human
$\frac{8}{16}$	24 "	96 "	Hailed	"	48 "	84 "	Hunter
$\frac{8}{16}$	24 "	120 "	Halloo	"	48 "	96 "	Hagar
$\frac{8}{16}$	30 "	72 "	Hamlet	"	48 "	120 "	Hazel

Gauge.	Width.	Length.	Refined Black.	Charcoal Black.
$\frac{1}{4}$	24 inch.	72 inch.	Ladder	Marine
$\frac{1}{4}$	24 "	84 "	Laden	Maroon
$\frac{1}{4}$	24 "	96 "	Ladle	Marvel
$\frac{1}{4}$	24 "	120 "	Lagoon	Martin
$\frac{1}{4}$	26 "	72 "	Lake	Masked
$\frac{1}{4}$	26 "	84 "	Lambs	Mason
$\frac{1}{4}$	26 "	96 "	Lancet	Mastic
$\frac{1}{4}$	26 "	120 "	Lamp	Maxim
$\frac{1}{4}$	30 "	72 "	Lapse	Mayor
$\frac{1}{4}$	30 "	84 "	Last	Mazeppa
$\frac{1}{4}$	30 "	96 "	Latch	Meadow
$\frac{1}{4}$	30 "	120 "	Late	Meager
$\frac{1}{4}$	32 "	72 "	Lath	Mealy
$\frac{1}{4}$	32 "	84 "	Latin	Medal
$\frac{1}{4}$	32 "	96 "	Lawful	Menace
$\frac{1}{4}$	32 "	120 "	Liar	Mangle
$\frac{1}{4}$	34 "	72 "	Lazy	Menial
$\frac{1}{4}$	34 "	84 "	Leach	Merit
$\frac{1}{4}$	34 "	96 "	Lost	Meet
$\frac{1}{4}$	34 "	120 "	Learn	Match
$\frac{1}{4}$	36 "	72 "	League	Mate



## TELEGRAPH CIPHER

For Use in Ordering Sheet Iron.

Gauge.	Width.	Length.	Refined Black.	Charcoal Black.
$\frac{1}{4}$	36 inch.	84 inch.	Lease	Make
"	36 "	96 "	Leave	Mouth
"	36 "	120 "	Lime	Mineral
"	40 "	72 "	Legal	Mule
"	40 "	84 "	Levee	Monk
"	40 "	96 "	Level	Mary
"	40 "	120 "	Libel	Mute
"	42 "	84 "	Lifted	Marl
"	42 "	96 "	Lame	Mimic
"	42 "	120 "	Loan	Mirth
"	44 "	84 "	Linger	Mogul
"	44 "	96 "	Lump	Mohan
"	44 "	120 "	Linen	Moral
"	48 "	84 "	Limp	Mink
"	48 "	96 "	Lick	Musk
"	48 "	120 "	Lance	Mist
$\frac{5}{16}$	24 "	72 "	Nailer	Packer
"	24 "	84 "	Naked	Paddle
"	24 "	96 "	Napkin	Pagan
"	24 "	120 "	Nasal	Palfry
"	26 "	72 "	Nation	Paltry
"	26 "	84 "	Naval	Pansy
"	26 "	96 "	Nearly	Pantry
"	26 "	120 "	Namely	Papal
"	30 "	72 "	Nature	Parish
"	30 "	84 "	Naught	Parley
"	30 "	96 "	Needle	Parlor
"	30 "	120 "	Neigh	Parole
"	32 "	72 "	Nervous	Parrot
"	32 "	84 "	Nest	Parson
"	32 "	96 "	Nettle	Pascal
"	32 "	120 "	Newest	Paste
"	34 "	72 "	Nibble	Pathos
"	34 "	84 "	Nickle	Peanut
"	34 "	96 "	Noisy	Pearl
"	34 "	120 "	Noodle	Pebble
"	36 "	72 "	Normal	Pecan
"	36 "	84 "	Notary	People
"	36 "	96 "	Notchy	Pepper
"	36 "	120 "	Nipper	Perch
"	40 "	72 "	Nobby	Petty
"	40 "	84 "	Number	Pewter
"	40 "	96 "	Never	Phalanx
"	40 "	120 "	Nimble	Phantom
"	42 "	84 "	Nichols	Physic
"	42 "	96 "	Nancy	Pious
"	42 "	120 "	Nebula	Pique
"	44 "	84 "	Nestle	Pistol
"	44 "	96 "	Nankeen	Pitman
"	44 "	120 "	Nausea	Plague
"	48 "	84 "	Napa	Planet
"	48 "	96 "	Needy	Plenty
"	48 "	120 "	Nenter	Plucky
$\frac{3}{8}$	24 "	72 "	Oaken	Rabbit

# TELEGRAPH CIPHER

For Use in Ordering Sheet Iron.

Gauge.	Width.	Length.	Refined Black.	Charcoal Black.
38	24 inch.	84 inch.	Oasis	Raffle
"	24 "	96 "	Obey	Rainy
"	24 "	120 "	Oblige	Raisin
"	26 "	72 "	Omen	Rajah
"	26 "	84 "	Obtain	Ramble
"	26 "	96 "	Obtuse	Rascal
"	26 "	120 "	Ocean	Rasper
"	30 "	72 "	Ostrich	Rattan
"	30 "	84 "	Oddity	Ratify
"	30 "	96 "	Odium	Ratio
"	30 "	120 "	Omega	Ravage
"	32 "	72 "	Onion	Razee
"	32 "	84 "	Omelet	Rabel
"	32 "	96 "	Onward	Rebuff
"	32 "	120 "	Opera	Record
"	34 "	72 "	Opiate	Regal
"	34 "	84 "	Oppose	Regent
"	34 "	96 "	Orange	Rejoice
"	34 "	120 "	Ordain	Relax
"	36 "	72 "	Oracle	Rents
"	36 "	84 "	Omit	Ream
"	36 "	96 "	Olive	Rich
"	36 "	120 "	Ontario	Ride
"	40 "	72 "	Oreano	Rifle
"	40 "	84 "	Oily	Rigid
"	40 "	96 "	Octave	Ripper
"	40 "	120 "	Orient	Roman
"	42 "	84 "	Organ	Rocky
"	42 "	96 "	Orchard	Robber
"	42 "	120 "	Object	Rogue
"	44 "	84 "	Optic	Rout
"	44 "	96 "	Orator	Russet
"	44 "	120 "	Orbit	Rustic
"	48 "	84 "	Ordeal	Ruppee
"	48 "	96 "	Owl	Royal
"	48 "	120 "	Osceola	Rudder

## USEFUL INFORMATION.

## Weight of Flat Bar Iron.

Per Foot.

Size, in.	1-16	$\frac{1}{8}$	3-16	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1	.21	.42	.63	.84	1.05	1.26	1.47	1.68	2.11	2.53	2.95	3.37
1 $\frac{1}{8}$	.24	.47	.71	.95	1.18	1.42	1.66	1.90	2.37	2.84	3.32	3.79
1 $\frac{1}{4}$	.26	.53	.79	1.05	1.32	1.58	1.84	2.11	2.63	3.16	3.68	4.21
1 $\frac{3}{8}$	.29	.58	.87	1.16	1.45	1.74	2.03	2.32	2.89	3.47	4.05	4.63
1 $\frac{1}{2}$	.32	.63	.95	1.26	1.58	1.90	2.21	2.53	3.16	3.79	4.42	5.05
1 $\frac{5}{8}$	.34	.68	1.03	1.37	1.71	2.05	2.39	2.74	3.42	4.11	4.79	5.47
1 $\frac{3}{4}$	.37	.74	1.11	1.47	1.84	2.21	2.58	2.95	3.68	4.42	5.16	5.89
1 $\frac{7}{8}$	.40	.79	1.18	1.58	1.97	2.37	2.76	3.16	3.95	4.74	5.53	6.32
2	.42	.84	1.26	1.68	2.11	2.53	2.95	3.37	4.21	5.05	5.89	6.74
2 $\frac{1}{8}$	.45	.90	1.34	1.79	2.24	2.68	3.13	3.58	4.47	5.37	6.26	7.16
2 $\frac{1}{4}$	.47	.95	1.42	1.90	2.37	2.84	3.32	3.79	4.74	5.68	6.63	7.58
2 $\frac{3}{8}$	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	5.00	6.00	7.00	8.00
2 $\frac{1}{2}$	.53	1.05	1.58	2.11	2.63	3.16	3.68	4.21	5.26	6.32	7.37	8.42
2 $\frac{5}{8}$	.55	1.11	1.66	2.21	2.76	3.32	3.87	4.42	5.53	6.63	7.74	8.84
2 $\frac{3}{4}$	.58	1.16	1.74	2.32	2.89	3.47	4.05	4.62	5.79	6.95	8.10	9.26
2 $\frac{7}{8}$	.61	1.21	1.82	2.42	3.03	3.63	4.24	4.84	6.05	7.26	8.47	9.68
3	.63	1.26	1.90	2.53	3.16	3.79	4.42	5.05	6.32	7.58	8.84	10.10
3 $\frac{1}{4}$	.68	1.37	2.05	2.74	3.42	4.11	4.79	5.47	6.84	8.21	9.58	10.95
3 $\frac{1}{2}$	.74	1.47	2.21	2.95	3.68	4.42	5.16	5.89	7.37	8.84	10.32	11.79
3 $\frac{3}{4}$	.79	1.58	2.37	3.16	3.95	4.74	5.53	6.32	7.89	9.47	11.05	12.63
4	.84	1.68	2.53	3.37	4.21	5.05	5.89	6.74	8.42	10.10	11.79	13.47
4 $\frac{1}{4}$	.90	1.79	2.68	3.58	4.47	5.37	6.26	7.16	8.95	10.74	12.53	14.31
4 $\frac{1}{2}$	.95	1.90	2.84	3.79	4.74	5.68	6.63	7.58	9.47	11.38	13.26	15.16
4 $\frac{3}{4}$	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	14.00	16.00
5	1.05	2.11	3.16	4.21	5.26	6.32	7.37	8.42	10.53	12.63	14.74	16.84
5 $\frac{1}{4}$	1.11	2.21	3.32	4.42	5.53	6.63	7.74	8.84	11.05	13.26	15.47	17.68
5 $\frac{1}{2}$	1.16	2.32	3.47	4.63	5.79	6.95	8.10	9.26	11.58	13.89	16.21	18.52
5 $\frac{3}{4}$	1.21	2.42	3.63	4.84	6.05	7.26	8.47	9.68	12.10	14.53	16.95	19.37
6	1.26	2.53	3.79	5.05	6.32	7.58	8.84	10.10	12.63	15.16	17.68	20.21

## Rule for Finding Weight of Flat Iron.

Multiply width by thickness, divide by 3 and multiply by 10. Thus, for 2 by  $\frac{3}{4}$ .  $2 \times \frac{3}{4} = \frac{3}{2} \div 3 = \frac{1}{2} \times 10 = 5$ , the approximate weight per foot.

# WEIGHT OF SQUARE BAR IRON.

Per Foot.

Size, Inches.	Weight, Per Foot. lbs.	Size, Inches.	Weight, Per Foot. lbs.	Size, Inches.	Weight, Per Foot. lbs.	Size, Inches.	Weight, Per Foot. lbs.
$\frac{1}{16}$	.0131	$1\frac{1}{8}$	3.80	$2\frac{1}{8}$	15.15	$4\frac{1}{8}$	57.20
$\frac{1}{8}$	.0525	$1\frac{3}{8}$	4.25	$2\frac{1}{4}$	17.	$4\frac{1}{4}$	60.75
$\frac{3}{16}$	.1182	$1\frac{5}{8}$	4.75	$2\frac{3}{8}$	18.5	$4\frac{3}{8}$	64.35
$\frac{1}{4}$	.2103	$1\frac{7}{8}$	5.25	$2\frac{1}{2}$	20.5	$4\frac{1}{2}$	68.1
$\frac{5}{16}$	.327	$1\frac{9}{8}$	5.78	$2\frac{5}{8}$	23.1	$4\frac{5}{8}$	72.
$\frac{3}{8}$	.4735	$1\frac{3}{4}$	6.35	$2\frac{3}{4}$	25.2	$4\frac{3}{4}$	75.65
$\frac{7}{16}$	.6445	$1\frac{7}{4}$	6.95	$2\frac{7}{8}$	27.5	$4\frac{7}{8}$	79.80
$\frac{1}{2}$	.84	$1\frac{1}{2}$	7.55	3	30.05	5	83.8
$\frac{9}{16}$	1.063	$1\frac{5}{8}$	8.2	$3\frac{1}{8}$	32.75	$5\frac{1}{8}$	88.25
$\frac{5}{8}$	1.314	$1\frac{3}{4}$	8.85	$3\frac{1}{4}$	35.5	$5\frac{1}{4}$	92.5
$\frac{11}{16}$	1.59	$1\frac{7}{8}$	9.57	$3\frac{3}{8}$	38.25	$5\frac{3}{8}$	97.15
$\frac{3}{4}$	1.891	$1\frac{3}{4}$	10.30	$3\frac{1}{2}$	41.15	$5\frac{1}{2}$	101.
$\frac{13}{16}$	2.221	$1\frac{9}{8}$	11.05	$3\frac{5}{8}$	44.15	$5\frac{5}{8}$	105.8
$\frac{7}{8}$	2.575	$1\frac{7}{8}$	11.83	$3\frac{3}{4}$	47.20	$5\frac{3}{4}$	110.5
$1\frac{1}{16}$	2.95	$1\frac{5}{8}$	12.62	$3\frac{7}{8}$	50.25	$5\frac{7}{8}$	115.15
1	3.35	2	13.4	4	53.75	6	120.25

For Steel, multiply tabular number above (for size) by 1.01.

## Rule for Finding Weight of Square Iron.

Square the diameter, divide by 3, and multiply by 10. Thus, for 2 inch square: The square of 2 is 4 divided by 3 is  $1\frac{1}{3}$ , multiplied by 10 equals  $13\frac{1}{3}$ , the approximate weight per foot.

# WEIGHT OF ROUND BAR IRON.

Per Foot.

Size, Inches.	Weight, Per Foot. lbs.	Size, Inches.	Weight, Per Foot. lbs.	Size, Inches.	Weight, Per Foot. lbs.	Size, Inches.	Weight, Per Foot. lbs.
$\frac{1}{16}$	.01	$1\frac{1}{8}$	2.975	$2\frac{1}{8}$	11.9	$4\frac{1}{8}$	44.85
$\frac{1}{8}$	.0411	$1\frac{3}{8}$	3.338	$2\frac{1}{4}$	13.3	$4\frac{1}{4}$	47.54
$\frac{3}{16}$	.0925	$1\frac{5}{8}$	3.725	$2\frac{3}{8}$	14.75	$4\frac{3}{8}$	50.33
$\frac{1}{4}$	.1651	$1\frac{7}{8}$	4.12	$2\frac{1}{2}$	16.41	$4\frac{1}{2}$	53.32
$\frac{5}{16}$	.2573	$1\frac{9}{8}$	4.545	$2\frac{5}{8}$	18.1	$4\frac{5}{8}$	56.34
$\frac{3}{8}$	.371	$1\frac{3}{4}$	5.	$2\frac{3}{4}$	19.85	$4\frac{3}{4}$	59.44
$\frac{7}{16}$	.505	$1\frac{7}{8}$	5.455	$2\frac{7}{8}$	21.5	$4\frac{7}{8}$	62.62
$\frac{1}{2}$	.657	$1\frac{1}{2}$	5.945	3	23.7	5	65.88
$\frac{9}{16}$	.835	$1\frac{5}{8}$	6.445	$3\frac{1}{8}$	25.55	$5\frac{1}{8}$	69.23
$\frac{5}{8}$	1.031	$1\frac{3}{4}$	6.975	$3\frac{1}{4}$	27.81	$5\frac{1}{4}$	72.65
$\frac{11}{16}$	1.235	$1\frac{7}{8}$	7.52	$3\frac{3}{8}$	29.85	$5\frac{3}{8}$	76.18
$\frac{3}{4}$	1.475	$1\frac{3}{4}$	8.05	$3\frac{1}{2}$	32.25	$5\frac{1}{2}$	79.75
$\frac{13}{16}$	1.74	$1\frac{9}{8}$	8.65	$3\frac{5}{8}$	34.45	$5\frac{5}{8}$	83.45
$\frac{7}{8}$	2.015	$1\frac{7}{8}$	9.25	$3\frac{3}{4}$	37.1	$5\frac{3}{4}$	87.20
$1\frac{1}{8}$	2.317	$1\frac{5}{8}$	9.9	$3\frac{7}{8}$	39.5	$5\frac{7}{8}$	91.05
1	2.625	2	10.55	4	41.95	6	95.

For Steel, multiply tabular number above (for size) by 1.01.

## Rule for Finding Weight of Round Iron.

Take number of quarter inches in diameter; square it and divide by 6. Thus, for 3 inch round. 3 inch equals 12-4: the square of 12 is 144, divided by 6 equals 24, the approximate weight per foot.

## WEIGHT OF ANGLE IRONS.

Per Foot.

Size, inches.....	$\frac{1}{8}$	3-16	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	11-16	$\frac{3}{4}$	13-16	$\frac{7}{8}$
6 x6' .....	...	...	...	...	...	...	19.2	21.7	24.2	26.7	29.2	31.7	34.2
4 x4 .....	...	...	...	...	9.5	11.2	12.9	14.5	16.2	17.9	19.5	...	...
3½ x3½ .....	...	...	...	...	8.3	9.7	11.2	12.7	14.1	15.6	17.0	...	...
3¼ x3¼ .....	...	...	...	...	7.7	9.0	10.4	11.7	13.1	14.4	15.8	...	...
3 x3 .....	...	...	...	5.9	7.2	8.4	9.7	10.9	12.2	...	...	...	...
2¾ x2¾ .....	...	...	...	5.4	6.5	7.7	8.8	...	...	...	...	...	...
2½ x2½ .....	...	...	...	4.9	5.9	7.0	8.0	...	...	...	...	...	...
2¼ x2¼ .....	...	...	3.5	4.5	5.4	6.4	7.3	...	...	...	...	...	1.75
2 x2 .....	...	...	3.1	4.0	4.8	5.6	...	...	...	...	...	...	...
1¾ x1¾ .....	...	2.1	2.8	3.5	4.3	5.0	...	...	...	...	...	...	...
1½ x1½ .....	...	1.8	2.4	3.0	3.6	...	...	...	...	...	...	...	...
1¼ x1¼ .....	1.0	1.5	2.0	...	...	...	...	...	...	...	...	...	...
1⅓ x1⅓ .....	0.9	1.4	1.8	...	...	...	...	...	...	...	...	...	...
1 x1 .....	0.8	1.2	1.6	...	...	...	...	...	...	...	...	...	...
¾ x¾ .....	0.6	0.9	...	...	...	...	...	...	...	...	...	...	...

## WEIGHT OF BAR STEEL.

Per Foot.

ROUND.		SQUARE.		OCTAGON.	
Size, inches.	Lbs.	Size, inches.	Lbs.	Size, inches.	Lbs.
$\frac{1}{4}$ .....	.166	$\frac{1}{4}$ .....	.213	$\frac{1}{2}$ .....	.84
$\frac{3}{8}$ .....	.375	$\frac{3}{8}$ .....	.470	$\frac{5}{8}$ .....	1.23
$\frac{1}{2}$ .....	.667	$\frac{1}{2}$ .....	.855	$\frac{3}{4}$ .....	1.75
$\frac{5}{8}$ .....	1.04	$\frac{5}{8}$ .....	1.33	$\frac{7}{8}$ .....	2.25
$\frac{3}{4}$ .....	1.50	$\frac{3}{4}$ .....	1.91	1 .....	2.75
$\frac{7}{8}$ .....	2.05	$\frac{7}{8}$ .....	2.61	1½ .....	3.66
1 .....	2.67	1 .....	3.40	1¼ .....	4.55
1⅓ .....	3.38	1⅓ .....	4.34	1⅓ .....	5.50
1¼ .....	4.17	1¼ .....	5.32	1½ .....	6.45
1⅓ .....	5.05	1⅓ .....	6.44	1⅓ .....	7.75
1½ .....	6.00	1½ .....	7.67	1¾ .....	9.20
1⅓ .....	7.05	1⅓ .....	9.00	1⅓ .....	10.04
1¾ .....	8.17	1¾ .....	10.44	2 .....	11.60
1⅓ .....	9.38	1⅓ .....	11.98	2½ .....	13.14
2 .....	10.68	2 .....	13.63	2¼ .....	14.75
2⅓ .....	12.04	2⅓ .....	15.35	2⅓ .....	16.00
2¼ .....	13.51	2¼ .....	17.20	2½ .....	17.85
2⅓ .....	15.05	2⅓ .....	19.17	2⅓ .....	19.50
2½ .....	16.68	2½ .....	21.20	2¾ .....	21.25
2⅓ .....	18.43	2⅓ .....	23.30	2⅓ .....	22.69
2¾ .....	20.19	2¾ .....	25.70	3 .....	25.00
2⅓ .....	22.00	2⅓ .....	27.74	...	...
3 .....	24.03	3 .....	30.60	...	...
3⅓ .....	26.12	3⅓ .....	33.18	...	...
3¼ .....	28.20	3¼ .....	35.90	...	...
3⅓ .....	30.45	3⅓ .....	38.78	...	...
3½ .....	32.70	3½ .....	41.65	...	...
3⅓ .....	35.12	3⅓ .....	44.17	...	...
3¾ .....	37.54	3¾ .....	46.70	...	...
4 .....	42.72	4 .....	54.40	...	...
4¼ .....	48.22	4¼ .....	61.40	...	...
4½ .....	54.06	4½ .....	68.85	...	...
5 .....	66.75	5 .....	85.00	...	...



# WEIGHT OF SHEET AND PLATE IRON.

Thickness by Birmingham Wire Gauge and inches.

Per Square Foot.

Gauge.	Thickness. Inches.	Weight, lbs.	Gauge.	Thickness. Inches.	Weight, lbs.
36.....	.004 .....	.162	11.....	.120 .....	4.88
35.....	.005 .....	.202	.....	$\frac{1}{8}$ OR .125 .....	5.054
34.....	.007 .....	.283	10.....	.134 .....	5.426
33.....	.008 .....	.322	9.....	.148 .....	5.98
32.....	.009 .....	.364	.....	$\frac{5}{32}$ OR .1562.....	6.305
31.....	.010 .....	.405	8.....	.165 .....	6.605
30.....	.012 .....	.485	7.....	.180 .....	7.27
29.....	.013 .....	.526	.....	$\frac{3}{16}$ OR .1875.....	7.578
28.....	.014 .....	.595	6.....	.203 .....	8.005
27.....	.016 .....	.676	.....	$\frac{7}{32}$ OR .2187.....	8.79
26.....	.018 .....	.755	5.....	.22 .....	8.912
25.....	.020 .....	.811	4.....	.238 .....	9.62
24.....	.022 .....	.912	.....	$\frac{1}{4}$ OR .25 .....	10.09
23.....	.025 .....	1.018	3.....	.259 .....	10.37
22.....	.028 .....	1.137	.....	$\frac{9}{32}$ OR .2812.....	11.38
.....	$\frac{1}{32}$ OR .03125.....	1.250	2.....	.284 .....	11.525
21.....	.032 .....	1.31	1.....	.3 .....	12.15
20.....	.035 .....	1.416	.....	$\frac{5}{16}$ OR .3125.....	12.58
19.....	.042 .....	1.605	0.....	.340 .....	13.715
18.....	.049 .....	1.975	.....	$\frac{11}{32}$ OR .3437.....	13.875
17.....	.058 .....	2.35	.....	$\frac{3}{8}$ OR .375 .....	15.10
16.....	.065 .....	2.637	00.....	.380 .....	15.26
.....	$\frac{1}{8}$ OR .0625 .....	2.518	.....	$\frac{3}{8}$ OR .4062.....	16.34
15.....	.072 .....	2.92	000.....	.425 .....	17.125
14.....	.083 .....	3.35	.....	$\frac{7}{16}$ OR .4375.....	17.65
.....	$\frac{3}{32}$ OR .0937 .....	3.78	0000.....	.454 .....	18.30
13.....	.095 .....	3.85	.....	$\frac{15}{32}$ OR .4687.....	18.90
12.....	.109 .....	4.4	00000.....	$\frac{1}{2}$ OR .50 .....	20.20

Galvanizing of Sheet Iron adds about one third of a pound per square foot to the weight.

## RUSSIA SHEET IRON.

No.	Size.	Weight per Sheet.	Wire Gauge.	No.	Size	Weight, per sheet.	Wire Gauge
7	28x56 inch.	6 $\frac{1}{4}$ lbs.....	No. 29	12	28x56 inch.	10 $\frac{3}{4}$ lbs.....	No. 24 $\frac{1}{2}$
8		7 $\frac{1}{4}$ " .....	" 28	13		11 $\frac{3}{4}$ " .....	" 24
9		8 " .....	" 27	14		12 $\frac{1}{2}$ " .....	" 23 $\frac{1}{2}$
10		9 " .....	" 26	15		13 $\frac{1}{2}$ " .....	" 22 $\frac{3}{8}$
11		10 " .....	" 25	16		14 $\frac{1}{2}$ " .....	" 21 $\frac{1}{2}$

Average weight per bundle about 240 pounds.

## WEIGHT OF SHEET COPPER.

Thickness by Birmingham Wire Gauge.

Per Sheet.

Gauge.	Sizes of Sheets.				
	14 by 48 lbs.	24 by 48 lbs.	30 by 60 lbs.	36 by 72 lbs.	48 by 72 lbs.
1		116	181	261	348
2		111	174	250	334
3		102	159	230	306
4		93	145	209	278
5		81	126	182	242
6		75	118	169	226
7		70	109	157	209
8		63	99	142	190
9		58	90	130	173
10		48	81	117	156
11		46	73	104	139
12		41	64	91	122
13		35	54	78	104
14		29	45	65	86
15		26	41	59	78
16		23	36	52	70
17		20	32	45	60
18		18	27	39	52
19		16	24	35	47
20		14	22	32	43
21		13	20	29	39
22	6½	12	18	26	35
23	5¾	10	16	23	31
24	5¼	9	15	21	28
25	4¾	8	12½	19	25
26	4	7	11	15	21
27	3½	6	9¾	13	18
28	3	5	7	11	15

## WEIGHT OF BAR COPPER.

ROUND.

Per Foot.

Diam., Inches.	
1-16	.011
⅛	.046
3-16	.105
¼	.187
5-16	.295
¾	.424
7-16	.575
½	.75
9-16	.95
⅝	1.17
11-16	1.42
¾	1.7
13-16	2.
⅞	2.3
15-16	2.64
1	3.01
1 1-16	3.41
1 ⅛	3.85
1 3-16	4.29
1 ¼	4.73

## WEIGHT OF BAR BRASS.

ROUND.

Per Foot.

Diam., Inches.	
1-16	.011
⅛	.045
3-16	.1
¼	.175
5-16	.275
¾	.395
7-16	.54
½	.71
9-16	.9
⅝	1.1
11-16	1.35
¾	1.6
13-16	1.85
⅞	2.15
15-16	2.48
1	2.85
1 1-16	3.20
1 ⅛	3.57
1 3-16	3.97
1 ¼	4.41

## WEIGHT OF WIRE.

Thickness by Birmingham Wire Gauge.

Per 100 Feet.

No. of Gauge.	Iron.	Steel.	Copper.	Brass.
0000	54.62	55.13	62.39	58.93
000	47.86	48.32	54.67	51.64
00	38.27	38.63	43.71	41.28
0	30.63	30.92	34.99	33.05
1	23.85	24.07	27.24	25.73
2	21.37	21.57	24.41	23.06
3	17.78	17.94	20.3	19.18
4	15.01	15.15	17.15	16.19
5	12.82	12.95	14.65	13.84
6	10.92	11.02	12.47	11.78
7	8.586	8.667	9.807	9.263
8	7.214	7.283	8.241	7.783
9	5.805	5.859	6.63	6.262
10	4.758	4.803	5.435	5.133
11	3.816	3.852	4.359	4.117
12	3.148	3.178	3.596	3.397
13	2.392	2.414	2.732	2.58
14	1.826	1.843	2.085	1.969
15	1.374	1.387	1.569	1.482
16	1.119	1.13	1.279	1.208
17	.8915	.9	1.018	.9618
18	.6363	.6423	.7268	.6864
19	.4675	.472	.534	.5043
20	.3246	.3277	.3709	.3502
21	.2714	.274	.31	.2929
22	.2079	.2098	.2373	.2241
23	.1656	.1672	.1892	.1788
24	.1283	.1296	.1465	.1384
25	.106	.107	.1211	.1144
26	.0859	.0867	.0981	.0926
27	.0678	.0685	.0775	.0732
28	.0519	.0524	.0593	.056
29	.0448	.0452	.0511	.0483
30	.0382	.0385	.0436	.0412
31	.0265	.0267	.0303	.0286
32	.0215	.0217	.0245	.0231
33	.017	.0171	.0194	.0183
34	.013	.0131	.0148	.014
35	.0066	.0067	.0076	.0071
36	.0042	.0043	.0048	.0046

## YARDS OF IRON WIRE TO BUNDLE

Of 63 Pounds.

Gauge.	Yards.	Gauge.	Yards.	Gauge.	Yards.
No. 0	71	No. 7	239	No. 14	1142
No. 1	94	" 8	286	" 15	1468
No. 2	105	" 9	342	" 16	1954
No. 3	121	" 10	420	" 17	2540
No. 4	143	" 11	529	" 18	3150
No. 5	170	" 12	700	" 19	4085
No. 6	203	" 13	893	" 20	4912

## WEIGHT AND STRENGTH OF WIRE ROPES.

Showing approximately the comparative strength, sizes and weights per 100 feet in length, of Iron Wire Rope, Steel Wire Rope, Hemp Rope and Chain.

The sizes on each horizontal line are of equal strength.

Capacity of the Ropes and Chain. Working Load, lbs.	Breaking Strain, tons.	Round Charcoal Iron Wire Rope. Circum. in.	Round Crucible Steel Wire Rope. Circum. in.	Round Hemp Rope. Circum. in.	Flat Charcoal Wire Rope. Size in ins. width, thickness.	Flat Crucible Steel Wire Rope. Size in ins. width, thickness.	Iron Chain. Link, 100 feet.
300.....	1	1.....17	.....	2 3/4.....33	.....	.....	3/4.....90
550.....	1 1/2	1 1/4.....23	.....	3.....50	.....	.....	5/16.....122
800.....	2 1/2	1 1/2.....30	1.....17	3 1/4.....55	.....	.....	3/8.....160
1,500.....	4 1/2	1 3/4.....50	1 1/2.....30	4 1/4.....78	.....	.....	1/2.....210
2,000.....	6	2.....65	1 5/8.....41	5.....100	.....	.....	1/2.....266
2,500.....	7 1/2	2 1/4.....80	1 3/4.....50	6.....160	.....	.....	1/2.....333
3,300.....	10	2 1/2.....100	2.....65	6 1/2.....166	.....	.....	.....
4,200.....	12 1/2	2 3/4.....124	2 1/8.....75	7.....200	2 x 3/8.....144	.....	5/8.....420
5,000.....	15	3.....145	2 1/4.....80	7 1/2.....234	2 1/4 x 3/8.....154	.....	1 1/8.....500
6,000.....	18	3 1/4.....158	2 3/8.....97	7 3/4.....250	2 1/2 x 3/8.....171	.....	.....
7,000.....	21	3 1/2.....180	2 1/2.....100	8 1/4.....284	3 x 3/8.....220	2 x 3/8.....144	3/4.....500
8,000.....	24	3 3/4.....200	3.....140	9.....333	3 x 1/2.....270	2 1/2 x 3/8.....171	1 1/8.....666
9,000.....	27	4.....250	3 1/4.....158	10.....433	4 x 3/8.....275	2 1/2 x 1/2.....210	3/8.....833
10,000.....	30	4 1/4.....284	3 1/2.....190	10 1/2.....466	4 x 1/2.....345	3 x 3/8.....225	1 1/2.....950
11,000.....	33	4 1/2.....320	3 5/8.....195	11.....500	4 1/2 x 1/2.....395	.....	1.....1083
12,000.....	36	4 3/4.....350	3 3/4.....200	12.....567	5 x 1/2.....425	3 1/2 x 3/8.....242	.....
13,500.....	40	5.....380	3 7/8.....225	13.....784	5 1/2 x 1/2.....465	3 x 1/2.....270	1 1/4.....1200
18,000.....	55	5 1/2.....440	4.....250	14.....900	6 x 1/2.....510	4 x 3/8.....275	.....
22,000.....	65	6.....540	4 1/4.....280	16.....1166	6 1/2 x 1/2.....560	5 x 3/8.....356	.....

NOTE.—Drums or Pulleys should be 1000 times the size of the wire with which the rope is made, and in all cases the rope must lead fair into the pulley.

# SIZE AND WEIGHT OF ROPE.

MANILA CORDAGE.				TARRED HEMP.	
Circum., Inches.	Diameter, Inches.	Weight of 100 Fathoms.	Feet in 1 Pound.	Strain borne by New Ropes, Pounds.	Weight of 100 Fathoms
..... $\frac{1}{4}$ .....	..... $\frac{1}{8}$ .....	18 .....	33 .....	.....	24
..... $\frac{5}{16}$ .....	..... $\frac{3}{16}$ .....	24 .....	25 .....	For ropes in use, de-	34
1 $\frac{1}{4}$ .....	..... $\frac{3}{8}$ .....	31 .....	20 .....	duct one-third from these	40
1 $\frac{1}{2}$ .....	..... $\frac{1}{2}$ .....	44 .....	14 .....	figures to allow for chaf-	55
1 $\frac{3}{4}$ .....	..... $\frac{9}{16}$ .....	60 .....	10 .....	ing, etc.	75
2 .....	..... $\frac{5}{8}$ .....	79 .....	7 $\frac{1}{2}$ .....	3,000 .....	100
2 $\frac{1}{4}$ .....	..... $\frac{3}{4}$ .....	99 .....	6 .....	4,000 .....	125
2 $\frac{1}{2}$ .....	..... $\frac{13}{16}$ .....	122 .....	5 .....	5,000 .....	155
2 $\frac{3}{4}$ .....	..... $\frac{7}{8}$ .....	146 .....	4 .....	6,000 .....	190
3 .....	..... 1 .....	176 .....	3 $\frac{3}{8}$ .....	7,000 .....	225
3 $\frac{1}{4}$ .....	..... 1 $\frac{1}{16}$ .....	207 .....	3 .....	8,500 .....	265
3 $\frac{1}{2}$ .....	..... 1 $\frac{1}{8}$ .....	240 .....	2 $\frac{1}{2}$ .....	9,500 .....	300
3 $\frac{3}{4}$ .....	..... 1 $\frac{1}{4}$ .....	275 .....	2 $\frac{1}{6}$ .....	11,000 .....	355
4 .....	..... 1 $\frac{5}{16}$ .....	305 .....	2 .....	12,500 .....	405
4 $\frac{1}{4}$ .....	..... 1 $\frac{3}{8}$ .....	355 .....	1 $\frac{2}{3}$ .....	14,000 .....	455
4 $\frac{1}{2}$ .....	..... 1 $\frac{1}{2}$ .....	395 .....	1 $\frac{1}{2}$ .....	16,000 .....	500
5 .....	..... 1 $\frac{5}{8}$ .....	490 .....	1 $\frac{1}{4}$ .....	20,000 .....	630
5 $\frac{1}{2}$ .....	..... 1 $\frac{3}{4}$ .....	595 .....	1 .....	24,000 .....	750
Inches.					
6 .....	..... 2 .....	705 .....	10 .....	27,000 .....	910
6 $\frac{1}{2}$ .....	..... 2 $\frac{1}{8}$ .....	825 .....	8 $\frac{1}{2}$ .....	31,500 .....	1,050
7 .....	..... 2 $\frac{1}{4}$ .....	960 .....	7 $\frac{1}{2}$ .....	37,000 .....	1,235
7 $\frac{1}{2}$ .....	..... 2 $\frac{1}{2}$ .....	1,100 .....	6 $\frac{1}{2}$ .....	42,500 .....	1,400
8 .....	..... 2 $\frac{5}{8}$ .....	1,255 .....	5 $\frac{1}{2}$ .....	48,500 .....	1,600
8 $\frac{1}{2}$ .....	..... 2 $\frac{7}{8}$ .....	1,415 .....	5 .....	54,500 .....	1,820
9 .....	..... 3 .....	1,585 .....	4 $\frac{1}{2}$ .....	61,500 .....	2,050

Manila Rope is about 10 per cent stronger than Sisal.

## WEIGHT AND STRENGTH OF COIL CHAIN.

### Short Link.

Size, Inches.	Weight per Foot.	Breaking Strain, Pounds.	Size, Inches.	Weight per Foot.	Breaking Strain, Pounds.
$\frac{3}{16}$ .....	..... .50 .....	1 731	$\frac{5}{8}$ .....	..... 4.20 .....	19,219
$\frac{1}{4}$ .....	..... .90 .....	3,069	$\frac{11}{16}$ .....	..... 5 00 .....	23,274
$\frac{5}{16}$ .....	..... 1.22 .....	4,794	$\frac{3}{4}$ .....	..... 5 90 .....	27 687
$\frac{3}{8}$ .....	..... 1.66 .....	6 922	$\frac{13}{16}$ .....	..... 6.66 .....	32,301
$\frac{7}{16}$ .....	..... 2.10 .....	9,408	$\frac{7}{8}$ .....	..... 8 33 .....	37,632
$\frac{1}{2}$ .....	..... 2.69 .....	12,320	$\frac{15}{16}$ .....	..... 9.50 .....	43,277
$\frac{9}{16}$ .....	..... 3.33 .....	15,590	1 .....	..... 10.80 .....	49,280



## AVERAGE WEIGHTS OF AXLES.

Per Set.

Inches.	Pounds.	Inches.	Pounds.
1 x 6	30	2 x 10 1/2	185
1 1/8 x 6 1/2	38	2 1/8 x 11	205
1 1/4 x 7	56	2 1/4 x 11	240
1 3/8 x 7 1/2	65	2 1/2 x 12	300
1 1/2 x 7 1/2	88	3 x 13	475
1 5/8 x 8	100	3 1/4 x 15	600
1 3/4 x 9	120	3 1/2 x 15	700
1 7/8 x 9 1/2	150		

## AVERAGE WEIGHTS OF SPRINGS.

END SPRINGS.

Per Pair.

SIDE SPRINGS.

Per Pair.

Inches.	Pounds.	Inches.	Pounds.
1 1/4 x 3 x 36	29	1 1/2 x 4 x 56	37
1 1/4 x 4 x 36	36	1 1/2 x 5 x 56	44
1 1/2 x 3 x 36	39	1 3/4 x 4 x 56	47
1 1/2 x 4 x 36	43	1 3/4 x 5 x 56	55
1 1/2 x 5 x 36	52	2 x 5 x 56	60
1 3/4 x 4 x 36	51	2 x 6 x 56	66
1 3/4 x 5 x 36	64		
1 3/4 x 6 x 36	75		
2 x 5 x 36	72		
2 x 6 x 36	83		

## LAP-WELDED IRON BOILER FLUES.

### Weights and Dimensions.

Outside Diameter.	Thickness W. G.	Wt. per Foot., Lbs.	Outside Diam.	Thickness W. G.	Wt. per Ft., Lbs.
1 1/4	14	1.65	3 1/4	11	4.15
1 1/2	14	1.70	3 1/2	10	5.20
1 3/4	13	1.85	3 3/4	10	5.30
2	13	2.10	4	10	5.55
2 1/4	13	2.30	5	9	7.1
2 1/2	12	2.50	6	8	10.5
2 3/4	12	3.15	7	8	12.2
3	11	3.60			

## WROUGHT IRON PIPE.

### Weight and Dimensions.

For Gas, Steam and Water.

1 1/4 in. and below Butt welded ; 1 1/2 in. and above Lap welded ; proved to 300 lbs. sq. in., by hydraulic pressure.

Inside Diam., Inches.	Actual Outside Diam., Inches.	Weight Per Foot.	Inside Diam., Inches.	Actual Outside Diam., Inches.	Weight, Per Foot.
1/8	.405	.243	1 1/2	1.9	2.604
1/4	.54	.422	2	2.375	3.667
3/8	.675	.561	2 1/2	2.875	5.773
1/2	.84	.845	3	3.5	7.547
3/4	1.05	1.126	3 1/2	4.0	9.055
1	1.315	1.670	4	4.5	10.728
1 1/4	1.66	2.258			

### Pressure of Water per Square Inch for Different Heights.

To compute the pressure per square inch of a column of water, multiply the head in feet by .434. Example: 100 feet head, 100 X .434 = 43.31 pounds pressure per square inch.

# NUMBER OF NUTS TO 100 LBS.

## Standard Sizes.

SQUARE.				
Size of Bolt.	Diameter of Nut.	Thickness of Nut.	Diameter of Hole.	No. to 100 Lbs.
$\frac{1}{8}$	$\frac{11}{32}$	$\frac{1}{8}$	$\frac{3}{32}$	30,000
$\frac{3}{16}$	$\frac{13}{32}$	$\frac{3}{16}$	$\frac{5}{32}$	15,000
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{7}{32}$	7,350
$\frac{5}{16}$	$\frac{5}{8}$	$\frac{5}{16}$	$\frac{9}{32}$	3,550
$\frac{3}{8}$	$\frac{11}{8}$	$\frac{3}{8}$	$\frac{21}{64}$	3,100
$\frac{3}{8}$	$\frac{3}{4}$	$\frac{3}{8}$	$\frac{21}{64}$	2,150
$\frac{7}{16}$	$\frac{3}{4}$	$\frac{7}{16}$	$\frac{3}{8}$	1,850
$\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	1,150
$\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{7}{16}$	875
$\frac{9}{16}$	1	$\frac{9}{16}$	$\frac{1}{2}$	810
$\frac{5}{8}$	$1\frac{1}{8}$	$\frac{5}{8}$	$\frac{9}{16}$	575
$\frac{5}{8}$	$1\frac{1}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	450
$\frac{3}{4}$	$1\frac{1}{4}$	$\frac{3}{4}$	$\frac{21}{32}$	380
$\frac{3}{4}$	$1\frac{3}{8}$	$\frac{3}{4}$	$\frac{21}{32}$	310
$\frac{7}{8}$	$1\frac{1}{2}$	$\frac{7}{8}$	$\frac{49}{64}$	235
1	$1\frac{3}{4}$	1	$\frac{7}{8}$	145
$1\frac{1}{8}$	2	$1\frac{1}{8}$	1	100
$1\frac{1}{4}$	$2\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{3}{32}$	70
$1\frac{3}{8}$	$2\frac{3}{4}$	$1\frac{3}{8}$	$1\frac{1}{4}$	47½
$1\frac{1}{2}$	3	$1\frac{1}{2}$	$1\frac{3}{8}$	35½
$1\frac{5}{8}$	$3\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{7}{16}$	27½
$1\frac{3}{4}$	$3\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{9}{16}$	22½
$1\frac{7}{8}$	$3\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{11}{16}$	18½
2	4	2	$1\frac{13}{16}$	15

# NUMBER OF WASHERS TO 100 LBS.

## Standard Sizes.

Diameter.	Size of Hole.	Thickness Wire Gauge.	Size of Bolt.	No. in 100 Lbs.
$\frac{1}{2}$	$\frac{1}{4}$	18	$\frac{3}{16}$	53,333
$\frac{5}{8}$	$\frac{5}{16}$	16	$\frac{1}{4}$	23,859
$\frac{3}{4}$	$\frac{6}{16}$	16	$\frac{1}{4}$	14,666
$\frac{7}{8}$	$\frac{3}{8}$	16	$\frac{5}{16}$	12,333
1	$\frac{7}{16}$	14	$\frac{3}{8}$	7,035
$1\frac{1}{4}$	$\frac{1}{2}$	14	$\frac{7}{16}$	5,000
$1\frac{3}{8}$	$\frac{9}{16}$	12	$\frac{1}{2}$	3,000
$1\frac{1}{2}$	$\frac{5}{8}$	12	$\frac{9}{16}$	2,570
$1\frac{3}{4}$	$\frac{11}{16}$	10	$\frac{5}{8}$	1,650
2	$\frac{13}{16}$	10	$\frac{3}{4}$	1,150
$2\frac{1}{4}$	$\frac{15}{16}$	9	$\frac{7}{8}$	850
$2\frac{1}{2}$	$1\frac{1}{16}$	9	1	625
$2\frac{3}{4}$	$1\frac{1}{4}$	9	$1\frac{1}{8}$	475
3	$1\frac{3}{8}$	9	$1\frac{1}{4}$	375
$3\frac{1}{2}$	$1\frac{1}{2}$	9	$1\frac{3}{8}$	300

## BOILER RIVETS.

Weight Per 100.

Length Under Head.	Diameters					
	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
1	1.895	4.848	9.660	16.79	26.49	39.3
$1\frac{1}{8}$	2.067	5.235	10.34	17.86	27.99	41.4
$1\frac{1}{4}$	2.238	5.616	11.04	18.96	29.61	43.5
$1\frac{3}{8}$	2.410	6.003	11.73	20.03	31.13	45.6
$1\frac{1}{2}$	2.582	6.402	12.43	21.04	32.74	47.8
$1\frac{5}{8}$	2.754	6.789	13.12	22.11	34.25	49.9
$1\frac{3}{4}$	2.926	7.179	13.81	23.21	35.86	52.0
$1\frac{7}{8}$	3.098	7.566	14.50	24.28	37.37	54.1
2	3.269	7.956	15.19	25.48	38.99	56.3
$2\frac{1}{8}$	3.441	8.343	15.88	26.56	40.40	58.4
$2\frac{1}{4}$	3.613	8.733	16.57	27.65	42.11	60.5
$2\frac{3}{8}$	3.785	9.120	17.26	28.73	43.67	62.6
$2\frac{1}{2}$	3.957	9.511	17.95	29.82	45.24	64.8
$2\frac{5}{8}$	4.129	9.898	18.64	30.90	46.80	66.9
$2\frac{3}{4}$	4.301	10.29	19.33	31.99	48.36	69.0
$2\frac{7}{8}$	4.473	10.67	20.02	33.08	49.92	71.1
3	4.644	11.06	20.71	34.18	51.49	73.3
$3\frac{1}{8}$	4.816	11.44	21.40	35.27	53.05	75.4
$3\frac{1}{4}$	4.988	11.84	22.09	36.35	54.61	77.5
$3\frac{3}{8}$	5.160	12.23	22.78	37.44	56.17	79.6
$3\frac{1}{2}$	5.332	12.62	23.48	38.52	57.74	81.8
$3\frac{5}{8}$	5.504	13.01	24.17	39.60	59.30	83.9
$3\frac{3}{4}$	5.676	13.39	24.86	40.69	60.86	86.0
$3\frac{7}{8}$	5.848	13.78	25.55	41.78	62.42	88.1
4	6.019	14.17	26.24	42.87	63.99	90.3
$4\frac{1}{8}$	6.191	14.56	26.93	43.94	65.55	92.4
$4\frac{1}{4}$	6.363	14.95	27.62	45.01	67.11	94.5

## COPPER BELT RIVETS AND BURS.

Number in One Pound.

Length, in.	$\frac{1}{4}$	5-16	$\frac{3}{8}$	7-16	$\frac{1}{2}$	9-16	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	Burs.
No. 7	272	250	228	180	164	160	148	121	116	100	84	80	69	345
No. 8	276	248	208	200	178	172	152	136	130	104	96	..	..	390
No. 9	340	280	272	248	228	220	184	176	156	136	..	..	..	610
No. 10	544	448	384	340	304	300	272	238	204	..	..	..	..	716
No. 12	588	512	452	404	364	334	304	272	..	..	..	..	..	985

## RAILROAD SPIKES.

Length, In.	Thickness, inches.	No. per 100 Pounds.	Length, inches.	Thickness, inches.	No. per 100 Pounds.
$4\frac{1}{2}$	$\frac{7}{16}$	351	$5\frac{1}{2}$	$\frac{1}{2}$	237
$4\frac{1}{2}$	$\frac{1}{2}$	267	$5\frac{1}{2}$	$\frac{5}{8}$	193
5	$\frac{3}{8}$	473	$5\frac{1}{2}$	$\frac{7}{8}$	146
5	$\frac{7}{16}$	326	6	$\frac{1}{2}$	207
5	$\frac{1}{2}$	260	6	..	175
5	$\frac{9}{16}$	197	6	$\frac{5}{8}$	131
5	$\frac{5}{8}$	172	..	..	..

## CUT SPIKES.

Average Number per Pound.

4 Inch.....	12	5 1/2 Inch.....	6
4 1/2 ".....	10	6 ".....	4
5 ".....	8		

## SHIP SPIKES.

Average Number per 100 Pounds.

Thickness, Inches.	Length, Inches.	No. in 100 Pounds.	Thickness, Inches.	Length, Inches.	No. in 100 Pounds.
1/4.....	3.....	1,500	3/8.....	6.....	380
1/4.....	3 1/2.....	1,260	3/8.....	7.....	322
1/4.....	4.....	1,100	3/8.....	8.....	304
1/4.....	4 1/2.....	976	7/8.....	7.....	297
1/4.....	5.....	920	7/8.....	8.....	256
5/16.....	3 1/2.....	805	7/8.....	9.....	200
5/16.....	4.....	757	1/2.....	7.....	204
5/16.....	4 1/2.....	710	1/2.....	8.....	171
5/16.....	5.....	620	1/2.....	9.....	160
5/16.....	6.....	580	1/2.....	10.....	148
3/8.....	5.....	495			

## NAILS.

Average No. per Pound, Ordinary Cut.

Size.	Length.	No. in Lb.	Size.	Length.	No. in Lb.
3d fine.....	1 1/8 inch.....	760	12d.....	3 1/4 inch.....	44
3d.....	1 1/4 ".....	480	20d.....	4 ".....	24
4d.....	1 1/2 ".....	300	30d.....	4 1/2 ".....	18
5d.....	1 3/4 ".....	200	40d.....	5 ".....	14
6d.....	2 ".....	190	50d.....	5 1/2 ".....	12
8d.....	2 1/2 ".....	92	60d.....	6 ".....	10
10d.....	3 ".....	60			

### Clinch.

### Fence.

### Finishing.

Length, inch.	No. in Lb.	Size.	No. in Lb.	Size.	No. in Lb.
2.....	152	6d.....	80	4d.....	384
2 1/4.....	133	8d.....	50	5d.....	256
2 1/2.....	92	10d.....	34	6d.....	204
2 3/4.....	72	12d.....	29	8d.....	102
3.....	60			10d.....	80

## EMERY AND CORUNDUM

### Are Ranked or Graded as follows.

No. 8-10 represent.....	A Wood Rasp
No. 16-20 ".....	A Cabinet Rasp
No. 24-30 ".....	A Cabinet File
No. 36-40 ".....	A Bastard Cut File
No. 46-60 ".....	A Second Cut File
No. 70-80 ".....	A Smooth Cut File
100-120 (FFF) represent.....	A Dead Smooth File

### Emery Paper and Cloth

Compare with Emery as follows:

Emery.....	No. Crocus	Flour	120	100	90	80	70	60	54	46
Paper or Cloth.....	" 000	00	0	100	1/2	1	1 1/2	2	2 1/2	3

## WEIGHT OF LEAD PIPE PER FOOT.

Inside Diam., Inches.	A		B		C	
	Strong.	Lb. oz.	Medium.	Lb. oz.	Light.	Lb. oz.
1/2.....	1	12	1	4	1	0
5/8.....	2	8	2	0	1	12
3/4.....	3	0	2	4	2	0
1.....	4	0	3	4	2	8
1 1/4.....	4	12	3	12	3	0

## COMPRESSED BUCK SHOT AND BALLS.

Diameter.		No. of Balls to the lb.	Diameter.		No. of Balls to the lb.
No. 3.....	2 5/16 inch	288	No. 00.....	3 4/16 inch	113
No. 2.....	2 7/16 " "	225	No. 000.....	3 6/16 " "	100
No. 1.....	2 9/16 " "	172	Balls.....	3 8/16 " "	85
No. 0.....	3 2/16 " "	140	Balls.....	4 4/16 " "	50

## PATENT FINISHED DROP SHOT.

American Standard Sizes.

Diameter.		No. of Shot to the oz.	Diameter.		No. of Shot to the oz.
No. 12.....	5/16 inch	2,326	No. 4.....	1 1/16 inch	132
No. 11.....	6/16 " "	1,346	No. 3.....	1 4/16 " "	106
No. 10.....	7/16 " "	848	No. 2.....	1 5/16 " "	86
No. 9.....	8/16 " "	568	No. 1.....	1 6/16 " "	71
No. 8.....	9/16 " "	399	No. B.....	1 7/16 " "	59
No. 7.....	10/16 " "	291	No. BB.....	1 8/16 " "	50
No. 6.....	1 1/16 " "	218	No. BBB.....	1 9/16 " "	42
No. 5.....	1 2/16 " "	168			



## SHEET RUBBER PACKING.

### Weight per Square Yard.

Thickness.....	1-32	1-16	3-32	$\frac{1}{8}$	3-16	$\frac{1}{4}$
Pounds, about.....	2 $\frac{1}{2}$	5	7 $\frac{1}{2}$	10	15	20

## BELTING.

Horse-power of a belt equals velocity in feet per minute, multiplied by the width—the sum divided by 1000.

One inch single belt moving at 1000 feet per minute equals 1 horse-power.

Double belts about 700 feet per minute, per 1 inch width, equals 1 horse-power.

For double belts of great length, over large pulleys, allow about 500 feet per minute per 1 inch of width per horse-power.

Power should be communicated through the lower running side of a belt; the upper side to carry the slack.

Average breaking weight of a belt 3-16x1 inch wide—Leather, 530 pounds; 3 ply rubber, 600 pounds.

The strength of a belt increases directly as its width. The coefficient of safety for a laced belt is: Leather equals 1-16 breaking weight; Rubber equals  $\frac{1}{8}$  breaking weight.

### To find Length of Belting when closely rolled.

The sum of the diameters of the roll and the eye in inches, multiplied by the number of turns made by the belt, and this product multiplied by the decimal .1309 will equal length of the belt in feet.

## GRINDSTONES.

### To find the Weight.

Square the diameter (in inches), multiply by thickness (in inches), then multiply by decimal .06363.

EXAMPLE.—Find the weight of a stone 4 feet 6 inches in diameter and 7 inches thick. 4 feet 6 inches = 54 inches; square of 54 = 2,916; multiplied by 7 = 20,412; multiplied by .06363 = Ans., 1,298 815 lbs., which is weight of stone.

To find the circumference of a circle, the diameter being given: Multiply the diameter by 3.1416.

To find the diameter of a circle, the circumference being given: Divide the circumference by 3.1416.

To find the area of a circle, the diameter being given: Multiply the square of the diameter by .7854.

To find the area of a circle, the diameter and circumference both being given: Multiply the diameter and circumference together, and divide the product by 4.

To find the cubic contents of a cylinder, the diameter and length being given: Multiply the square of the diameter by .7854, and the product by the length.

## TO TEST IRON AND STEEL.

A medium even grain with fibres denotes good iron.

A soft, tough iron, if broken gradually, gives long silky fibres of leaden gray hue, which twist together and cohere before breaking.

Badly refined iron gives a short, blackish fibre on fracture. A very fine grain denotes hard, steely iron, likely to be cold-short and hard.

Coarse grain, with bright crystallized fracture or discolored spots, indicate cold-short, brittle iron, which works easily when heated, and welds well. Cracks on the edge of a bar are indications of hot-short iron.

Good iron is readily heated, is soft under the hammer and throws out few sparks.

Good steel, in its soft state, has a curved fracture and a uniform gray lustre ; in its hard state, a dull, silvery, uniform white. Cracks, threads or sparkling particles denote bad quality.

Good steel will not bear a white heat without falling to pieces, and will crumble under the hammer at a bright red heat, while at a middling heat it may be drawn out under the hammer to a fine point. Care should be taken that before attempting to draw it out to a point, the fracture is not concave, and should it be so, the end should be filed to an obtuse point before operating. Steel should be drawn out to a fine point and plunged into cold water ; the fractured point should scratch glass.

To test its toughness, place a fragment on a block of cast iron, if good it will be driven by the blow of a hammer into the cast iron ; if poor, it will crush under the blow.

Nitric acid will produce a black spot on steel ; the darker the spot the harder the steel. Iron, on the contrary, remains bright if touched with nitric acid.

To restore burnt iron. Give a smart heat, protected from the air ; if injured by COLD HAMMERING, anneal slowly and moderately ; if HARD or STEELY, give one or more smart heats to extract the carbon.

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## TO PROTECT IRON AND STEEL FROM RUST.

Prof. F. Grace Calvert, of England, has discovered that the carbonates of potash and soda possess the same property of protecting iron and steel from rust as do those alkalies in a caustic state. If an iron blade is half immersed in a solution of either of the above named carbonates, it exerts so protective an action that that portion of the iron which is exposed to the influence of the damp atmosphere does not oxidize, even after a period of two years.

Similar results have been obtained with sea water to which have been added the carbonates of potash or soda. The applications of this fact are numerous and important.





